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REPORTS

UPON A

COURSE OF STUDIES FOR ELEMENTARY SCHOOLS.

PREPARED FOR THE SIXTIETH, SIXTY-FIRST AND SIXTY-SECOND REPORTS OF THE MASSACHUSETTS STATE BOARD OF EDUCATION.

BY

JOHN T. PRINCE,

AGENT OF THE MASSACHUSETTS STATE BOARD OF EDUCATION.

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P955

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A PRELIMINARY REPORT

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REPORT.

A course of studies is intended as a guide in determining (*a*) the subjects of instruction that shall be pursued, (*b*) the time — both relative and absolute — which shall be given to the various subjects, (*c*) the order in which the subjects and parts of subjects shall be presented and reviewed and (*d*) the distribution of subjects that shall be made in the program in respect both to a proper correlation of studies and to the teaching force of the school.

The questions here involved must be determined by considerations which relate to the child's nature and capacity, and by the ends which are sought to be secured in education. It is fair to presume that these considerations have been the guide of persons in making the courses of studies now in use, and any intelligent presentation of a new course or revision of an old one should be governed, in some degree at least, by the opinions of wise educators everywhere, as embodied in the courses of studies which they have made. With this thought in mind I caused to be sent to various places in this country blanks calling for the following facts in relation to the courses and programs now in actual operation: —

1. The age at which children are permitted to begin the prescribed course and the length of the course.

2. The number of exercises or recitations in each subject and grade and the average length of recitation.

3. Facts in relation to elective studies, including (*a*) the names of studies that are elective, (*b*) the grades in which they are pursued, (*c*) the proportion of the whole number of schools in which some of the studies are elective and (*d*) a statement of results observed.

4. Facts in relation to departmental instruction, including (*a*) the proportion of teachers (except teachers of music, drawing and manual training) that teach one or more subjects in two

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or more rooms, and (*b*) details of plans pursued and results observed.

5. Facts in relation to the correlation of studies, including (*a*) the names of subjects that are grouped in the course and the groupings that are made, (*b*) the proportion of teachers that follow a systematic plan of correlation, and (*c*) methods pursued, with some statement of results observed.

Blanks calling for this information were sent to all cities in the country having more than one hundred thousand inhabitants, to the practice departments of twenty typical normal schools situated in various parts of the country and to the cities and larger towns of Massachusetts. Replies, complete or partial, from the following places have been received: —

Cities outside of Massachusetts.

Allegheny, Pa.	Indianapolis, Ind.	Providence, R. I.
Brooklyn, N. Y.	Louisville, Ky.	St. Louis, Mo.
Cincinnati, O.	New Orleans, La.	St. Paul, Minn.
Cleveland, O.	Omaha, Neb.	
Denver, Col.	Philadelphia, Pa.	

Normal Schools (Practice Departments).

Bridgewater, Mass.	New Britain, Conn.	Trenton, N. J.
California, Pa.	New York Teachers' College.	Warrensburg, Mo.
Cedar Falls, Iowa.	Oshkosh, Wis.	Westfield, Mass.
Chicago, Ill. (Cook Co.).	Oswego, N. Y.	Winona, Minn.
Emporia, Kan.	Terre Haute, Ind.	
Framingham, Mass.		

Cities and Towns in Massachusetts.

Amherst.	Fitchburg.	Northampton.
Athol.	Gardner.	North Attleborough.
Belmont.	Gloucester.	Pittsfield.
Boston.	Greenfield.	Quincy.
Braintree.	Haverhill.	Somerville.
Brockton.	Lawrence.	Springfield.
Brookline.	Lowell.	Stoneham.
Cambridge.	Lynn.	Taunton.
Canton.	Malden.	Walpole.
Chelsea.	Marlborough.	Waltham.
Chicopee.	Medford.	Watertown.
Clinton.	Middleborough.	Wellesley.
Concord.	Milton.	Weymouth.
Dedham.	New Bedford.	Winchester.
Everett.	Newburyport.	Woburn.
Fall River.	North Adams.	Worcester.

In the responses to the circulars of inquiry, one significant fact was brought out, namely, the transient or unsatisfactory character of present courses in the estimation of many superintendents and teachers. Several State and city superintendents gave as a reason for not filling out the blanks relating to time schedules that they were about making out new courses and, therefore, preferred not to submit a report. The extent to which a revision of the course is going on indicates a widespread dissatisfaction in the courses in general use, both in respect to subjects of instruction and to time allotments. This fact alone would seem to justify an attempt to investigate present conditions, and to ascertain the opinions of advanced educators as to certain changes which have been proposed.

The following facts are collected from the replies received and from the courses of study accompanying them. Reference also is made to the courses of study, either suggested or prescribed, issued by State superintendents, to the reports of the Committee of Ten and of the Committee of Fifteen and to the courses of study prescribed in foreign countries.

Age of Admission and Length of Course.

The earliest age at which children are permitted to attend school in most of the western and central States is six years. In most cities and towns of Massachusetts and in some other eastern States it is five years. In most places where the earliest age of admission is six years, the length of the elementary course is eight years, and where the earliest age is five years, the course is generally nine years in length. Exceptions to this are found in several cities of New England whose elementary course is eight years in length for pupils who are permitted to enter school at five years of age. It should be said that in all places where the earliest permitted age of admission is five years, the actual average age of the admission of pupils into the lowest grade is much higher. For example, Somerville reports the average age of admission of pupils into the lowest grade for the past three years to be five years, seven and one half months. It is believed that this is a fair average of the age of pupils admitted to the first grade in most cities which permit children to attend school at five.

In the public elementary schools of England children may begin at three years of age and must begin at five, remaining in the infants' school until the age of seven. The length of the subsequent course is seven years.

In France and Germany the earliest age of admission to the primary school is six years, and the length of the elementary course is from six to eight years. In France, however, nearly half of all the children from two to six years of age are enrolled in the mother schools (*écoles maternelles*) or lower primary classes (*classes enfantines*). Many cities of Germany and of this country also provide for children under the age of six in the public kindergarten.

It is possible that the differences in this country in the earliest age of admission to the elementary schools and in the length of the course of such schools will disappear when the kindergarten becomes universally a part of the public school system. It may be fairly questioned, however, in any event, whether much of the formal intellectual work now carried on in many first year primary classes should be demanded of children before the age of six. If, where children are permitted to enter school at five, a sub-primary course could be pursued, consisting largely of manual and observational work, advancement in subsequent work required would be likely to be quite as rapid as it is at present where pupils are required to read and write much during the first year. In case there is a kindergarten course which children can begin at three or four years of age, the work of this sub-primary class could be supplementary to the work of the kindergarten and preparatory for the more formal work of the primary school. According to many of our best kindergartners and primary school teachers this connection between the two schools is very much to be desired. Further details of this plan will be given later in this report.

Subjects of Instruction.

The following table shows what subjects are taught in the various grades of schools in 60 of the cities and towns reporting. On account of incompleteness in the time schedules reported the other 16 places above named are not included. In a comparison of the figures it should be borne in mind that in 44

of the places there are nine grades in the course, and that in the other 16 places there are only eight grades.

TABLE I. — *Showing the Number of Cities and Towns (out of 60 Places reporting) in which the Various Subjects are taught and in what Grades the Subjects are taught.*

[Grade 9 in 44 places.]

BRANCHES.	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.	Grade 9.
Reading,	60	60	60	60	60	60	60	59	43
Writing,	60	60	60	60	60	59	55	52	36
Spelling (lists),	34	46	53	58	58	58	56	54	38
Language and composition,	51	57	60	60	58	55	51	47	41
Grammar,	–	–	–	2	4	15	34	51	40
Latin,	–	–	–	–	–	1	4	5	12
French or German,	–	–	–	–	1	1	3	2	3
Arithmetic,	53	59	60	60	59	60	59	57	41
Algebra,	–	–	–	–	–	–	6	11	22
Geometry,	–	–	–	2	4	5	6	8	6
History and biography,	9	12	15	22	29	32	47	57	39
Geography,*	9	14	23	38	40	40	41	39	24
Elementary science or nature study,	50	51	52	52	52	51	50	47	37
Singing,	57	58	59	59	59	59	56	56	42
Drawing,	58	58	58	58	59	59	59	58	43
Manual training or cooking,	7	5	5	10	13	14	15	13	38

* Forty-one places reporting, twenty-nine of them having nine grades.

From the above table it appears that the three R's still hold the most prominent place in all the grades. Singing and drawing are taught in nearly every grade of all schools reported, while spelling and language have almost as good a showing. Geography and history are almost universally taught in the upper grades, and their elements are not neglected in a large proportion of the lower grades. If the supplementary reading in these subjects had been counted there would doubtless have been a better showing in all the lower grades.

The most surprising figures are those given in connection with elementary science or nature study. That more than five sixths of all the grades below the eighth and a scarcely less proportion in the eighth and ninth grades are receiving instruction

in this branch is most gratifying. It will be remembered that elementary science was one of the so-called high school branches recommended by the Committee of Ten in their report three years ago. It is believed that it has found its way into a large number of the best schools since the report was made. The other branches recommended, viz., Latin, French or German, algebra and geometry, have not fared so well, and yet more than one half of the whole number of courses reported have in them one or more of these subjects. The following table will show to what extent and with what success they have been introduced into the grammar school. Manual training, embracing wood-working, sewing and cooking, is also included in the table. Modeling, weaving, etc., done in the primary grades, are not here reckoned as a part of manual training.

TABLE II. — *Showing the Places and Grades of Schools where a Foreign Language, Algebra, Geometry and Manual Training are taught, and Some of the Results observed by the Superintendent or Principal.*

CITY OR TOWN.	Subject.	Grade or Year in School.	Remarks by the Superintendent of Schools or Principal.
Amherst, . . .	Algebra,[1] .	7, 8	Algebra and geometry ought to be useful implements in the hands of a good teacher to develop clear and correct thinking, but with the average teacher I am not sure that there is much choice between them and arithmetic. They help somewhat to displace useless portions of the arithmetic work and to introduce common sense methods. Results in manual training satisfactory; I hope to have it extended.
	Geometry,[1] .	9	
	Man'l Train'g,	5-9	
Belmont, . . .	Latin, . .	9	Algebra has been taught in grammar grade for three or more years. Pupils are better prepared for their high school work in mathematics, and there is not such a gulf between the high and grammar schools as formerly. Latin only this year. No results yet. Pupils are fond of manual training and they do their work well.
	Algebra, . .	9	
	Man'l Train'g,	4-9	
Boston, . . .	Man'l Train'g,	4-9	See opinions of the superintendent and some of the grammar masters as to "Enrichment Studies" on pages 451 and 452.
Braintree, . .	Latin,[2] . .	7, 8	During the past three years all pupils in the two highest grades have been very glad of the opportunity of studying both Latin and algebra. (See statement of the superintendent on page 447.)
	Algebra,[3] .	7, 8	

[1] Taken in connection with arithmetic. [2] Optional and taken in place of English grammar.
[3] Optional and taken in place of arithmetic.

TABLE II. — *Showing Places and Grades of Schools, etc.* — Continued.

CITY OR TOWN.	Subject.	Grade or Year in School.	Remarks by the Superintendent of Schools or Principal.
Bridgewater (Practice School).	Algebra,[1] Man'l Train'g,	9 1-8	We have been much pleased with the good results from the study of algebra. The pupils enjoy it and it develops the power of thought. The manual training is helpful in quickening observation of material things and processes and in developing skill in manipulation. It gives zest to other work. Both are valuable branches for the grammar school course.
Brookline,	Latin,[2] French,[2] Algebra, Man'l Train'g,	9 7-9 9 3-9	We have been working for several years on a process of enrichment which has changed our primary and intermediate grade work to such an extent that we can put English grammar earlier than we could before. We are now doing quite a good deal in this subject below the eighth grade. The pupils who have French and Latin do much less in English in the upper grades. (See statement on page 447.)
Brooklyn, N. Y.,	Algebra, Geometry, Man'l Train'g,	7, 8 7, 8 5, 6	For opinion of the superintendent see page 448.
Cambridge,	Geometry, Man'l Train'g,	8, 9 4-6	The time for teaching physics and geometry was obtained in the revision of the program by completing the study of geography in the eighth grade and by some modifications of the work in arithmetic. The results have been satisfactory. Superintendent Cogswell recommends that the boys of the fourth grade be allowed to join the class in sewing.
Canton,	Algebra, Geometry,	9 9	Taken in place of arithmetic for several years with good results. The pupils have no difficulty in understanding the elements of these subjects. They broaden the mind of the child in a way not possible through arithmetic alone.
Cedar Falls, Iowa (Practice School).	Latin,[3]	8	- - -
Chelsea,	Latin, Algebra,	9 9	The study of Latin has been of great benefit in easing up the first year of the high school. The study does not meet with any opposition, every pupil taking it. The only question is whether or not French and German are not more practical studies. One or more of the high school studies should be taken in the grammar school.
Cleveland, Ohio,	German,[3] Man'l Train'g,	1-8 1-8	- - -
Clinton,	Algebra,[4] Geometry,[4]	- -	These subjects, with physics, may be taken in well-graded schools without cramming or crowding if they are wisely correlated with other subjects, and the development of the child is regarded as of more importance than the teaching of subjects.
Concord,	Latin,[5] Algebra, Geometry, Man'l Train'g,	7, 8 8 7, 8 5-8	Pupils enter the high school having pretty well mastered the Latin inflections and with considerable knowledge of Latin syntax, a fair vocabulary and some ability to translate easy Latin into English. Algebra not tried long enough to see results. No demonstration work in geometry; practical, and attended with good results. Manual training confined to sewing and whittling; sewing is feasible and useful, whittling feasible and affords valuable training.

[1] Taken in connection with arithmetic. [2] Optional and partially extra. [3] Optional and extra.
[4] Optional and taken in place of arithmetic. [5] Optional and taken in place of English grammar.

TABLE II. — *Showing Places and Grades of Schools, etc.* — Continued.

CITY OR TOWN.	Subject.	Grade or Year in School.	Remarks by the Superintendent of Schools or Principal.
Dedham,	Latin,[1] Man'l Train'g,	9 4-7	For opinion of the superintendent see page 448.
Denver, Col.,	German,[1] Algebra, Man'l Train'g,	5-8 7 6-8	For opinion of the superintendent see page 449.
Everett,	Algebra, Man'l Train'g,	9 5-8	Algebra has been taught in the ninth grade one year. The results have justified its introduction. The pupils like it and they gain power from its study. We shall save one period a week in the high school, doing more in four periods than we could in five before the subject was taken in the grammar school.
Fitchburg,	Man'l Train'g,	5-9	Teachers report an interest in the subject. There is a tendency in many pupils to attend more carefully to the work of other departments.
Framingham (Practice School).	Latin,[1] Algebra, Man'l Train'g,	7-9 9 6-9	For opinion of the principal see page 449.
Gardner,	Latin,[2]	9	For those who take Latin a part of the English grammar and composition is omitted. In my judgment it is desirable to have Latin as an elective in grammar grades. The feasibility of the plan depends on grading and organization, but especially on fitness of teachers.
Haverhill,	Man'l Train'g,	5-9	It has made a pleasing change for the pupils from the ordinary work. It has had its value as a source of knowledge and has given a facility in the use of tools. It has not had any value in making the pupils more ready in judgment or method in their other studies or more self-controlled or manly in their deportment. My opinion is that its value as a branch of disciplinary education is greatly over-rated. I think it has been well taught here, but it has not fulfilled in its value my expectations.
Lynn,	Algebra,	9	Last year's work too desultory. Present work of pupils marked by more definite knowledge of the relations and generalizations of numbers or of quantities as represented by symbols, by clear comprehension of principles and operations peculiar to algebra and by understanding mathematical problems, especially those involving the equations. The introduction of algebra into the ninth grade is a success.
Malden,	Algebra,[3]	9	No obvious results yet perceived.
Medford,	Latin,[4] Algebra,[3] Geometry, Man'l Train'g,	9 8, 9 5-8 5-9	- - -
Middleborough,	Algebra,[3]	9	The results thus far have been satisfactory and justify the introduction of the subject. Pupils have done the arithmetic work better, besides the additional work in algebra. It has given increased power and interest.

[1] Optional and extra. [2] Optional and taken in place of English grammar.
[3] Alternates with arithmetic.
[4] Elective and taken in place of English grammar and physical geography.

TABLE II. — *Showing Places and Grades of Schools, etc.* — Continued.

CITY OR TOWN.	Subject.	Grade or Year in School.	Remarks by the Superintendent of Schools or Principal.
Milton, . . .	Latin,[1] . . Algebra,[2] . Geometry, . Man'l Train'g,	7, 8 7, 8 6, 7 6 8	I look for this work to open avenues of knowledge to the pupil who does not go beyond the grammar school which would otherwise be always closed to him, and in which it will always be profitable and pleasurable for him to walk. For the pupil who goes to the high school it means better and more comprehensive work in the same lines in the high school.
New Bedford, . .	Man'l Train'g,	7-9	The practical results from sewing and cooking are gratifying. There is training in neatness, order and economy in the cooking course; something of hygiene also. Woodwork gives the boys valuable training in exactness, order, judgment and reasoning. Effect on drawing also good.
Newburyport, . .	Algebra,[3] . Geometry, .	7-9 -	We need more time before we can decide as to the value of these branches. The teachers are far from agreed in the matter. Some think that algebra is of great help to the pupil in abstract reasoning, while others, and I think the majority, consider it of value only to those who take the same subject afterwards in the high school.
North Adams, . .	Latin, . . Algebra, . .	9 9	Excellent results. Good effect on English. Increased interest in school work.
New York (Teachers' College).	Man'l Train'g,	2-6	- - -
Northampton, . .	Algebra,[3] . Man'l Train'g,	9 2-9	Algebra has helped arithmetic and has made high school work in this subject of greater advantage to the pupils. Manual training, wholly knife-work in the ordinary schoolroom. It gives accuracy and precision to the hand; makes the pupils more attentive and obedient to exact directions. There is little or no complaint and most pupils particularly enjoy it.
North Attleborough,	Latin, . . Algebra, . .	9 9	Two and a half years' experience with algebra in the ninth grade convinces me that it is admirably adapted to pupils of that grade. I am surprised that its place in the grammar school was not discovered long ago. Latin has been tried only a half year, with good results, however, so far. Both studies lead to closer application than was required by previous elementary work and therefore tend to bridge the chasm between the elementary schools and the high school.
Oshkosh, Wis. (Practice School).	Latin, . . German, . . Algebra, . . Geometry,[3] .	9 9 8 9	For opinions of the principal see page 450.
Pittsfield, . . .	Algebra,[3] . Geometry,[3] .	8, 9 8, 9	We introduced algebra and geometry into our grammar school course for the improvement of the grammar school work, and not for the purpose of anticipating or shortening the work of the high school. We aim to give our pupils, through this brief study of algebra and geometry, clearer ideas of mathematical truths in their practical aspects than they would naturally get from arithmetic alone, as well as somewhat broader views and insight and mental alertness. Our teachers seem to be agreed that the ends aimed at are being attained.

[1] Optional and taken in place of English grammar. [2] Alternates with arithmetic.
[3] Taken in connection with arithmetic.

TABLE II. — *Showing Places and Grades of Schools, etc.* — Concluded.

CITY OR TOWN.	Subject.	Grade or Year in School.	Remarks by the Superintendent of Schools or Principal.
Omaha, Neb.,	Algebra, Geometry,	8 7	The results from the algebra have been quite satisfactory. The time allowed for the geometry has been too short to show uniform or extensive results. The feeling is favorable to the departure on the whole.
Oswego, N. Y. (Practice School).	Man'l Train'g,	4-9	Manual training has awakened much interest on the part of pupils. It has increased their power to express themselves through the use of the hand. It cultivates accuracy, facility of expression in all hand work and adds greatly to the interest, especially in all lines of drawing.
Springfield,	Man'l Train'g,[1]	4-9	- - -
Stoneham,	Algebra,[2]	9	We are much pleased with the results so far. Arithmetic and algebra have equal time in the ninth grade. Algebra ought to be begun in the eighth grade. We are doing no less with the oldtime subjects because of the introduction of the new.
St. Paul, Minn.,	Algebra,[2] Geometry,[2] Man'l Train'g,	7 8 4-8	- - -
Trenton, N. J. (Practice School).	Latin,[3]	8	For pupils who are going to the high school, and who desire to get the best knowledge of English they can in the grammar school, the study of Latin is a good thing as the most direct way of strengthening the pupils' power in English.
Warrensburg, Mo. (Practice School).	Latin, Algebra, Geometry,	6 9 7-9 9	All these subjects have been taught with excellent results. We have had occasional failures, but they rank as the exceptions. If introduced into the grammar schools they should perhaps be taken as optional studies.
Wellesley,	Geometry,	7, 8	No regular text-book in use. The scholars are apt and interested. They see the point at once and the reasonableness of the study and practical investigation, as is not the case with algebra or Latin. The time is well spent, whether for a scholar that plans for a college course or for one that will enter business or a trade.
Waltham,	Man'l Train'g,	5-9	- - -
Watertown,	German,[3] Algebra, Geometry, Man'l Train'g,	9 8, 9 4-9 1-8	I remain fully convinced of the desirability of German, algebra and geometry as grammar school subjects. The algebra and geometry are correlated with arithmetic somewhat. Teachers say that the difference between our own hand-trained pupils and others is noticeable in the greater aptitude of our pupils whenever anything is to be done.
Winchester,	Latin,[1] French,[1] German,[1] Algebra, Geometry, Man'l Train'g,	8, 9 8, 9 8, 9 8, 9 6, 7 4, 5	The course prescribes algebra and geometry for all; Latin, French and German are elective. Also more of elementary physics in grammar schools. I have no doubt in this matter. Our children are starving under the old regime.
Winona, Minn. (Practice School).	Algebra,	7	- - -
Woburn,	Latin,[3] Algebra,[2] Geometry,[2]	8, 9 8, 9 8, 9	It is too early to judge of the value of Latin, algebra and geometry to the grammar school course. My impressions are strongly in their favor. At least, I would not willingly let them go.

[1] Optional and extra.

[2] Alternates with arithmetic.

[3] Optional and taken in place of English grammar.

The returns from which the foregoing table was prepared were accompanied by letters from which the following extracts are made: —

[Superintendent IRVING W. HORNE, Braintree, Mass.]

"From my study and experience in relation to the question of introducing algebra, Latin and geometry into the grammar school course I would earnestly advise that this be done. Algebra is distinguished from arithmetic only in method. Does it not seem reasonable that the higher or more useful method should supersede the lower method wherever possible, as Dr. Harris advises in the Committee of Fifteen report? It should not be taught as a science, but it can and should be used to make the problems and processes of arithmetic much easier than they otherwise would be. In this way the pupils would not get the notion that they are two distinct subjects but rather two related phases of the same subject. This plan would embody both concentration of power and economy of effort, — both highly desirable.

"It seems to me advisable to teach what may be called constructive geometry in connection with mechanical, industrial or geometrical drawing. Such a geometry is necessary to manual training and is a most desirable preparation for demonstrative or scientific geometry in the high school course. This constructive geometry is both easy and fascinating because of its apparent practical nature.

"The Latin and English grammars are so nearly alike that each is the constant interpretation of the other. In teaching the elements of the syntax of both languages together, the teacher can more easily give the pupils a clearer idea of the constructions in both languages and especially in English. The Latin vocabulary at this time should be made up largely of the best and most helpful English derivatives in the interest of the pupils' vocabulary and spelling. It is more natural and hence much easier for the child of twelve years to learn and remember the Latin paradigms than for one of fifteen years. I advocate Latin in preference to French, with the idea that the foreign language is to be begun in the latter part of the grammar school course. If the foreign language were to be begun with pupils at six or seven years of age, then, of course, French would be a much better language than Latin."

[Superintendent SAMUEL T. DUTTON, Brookline, Mass.]

"In regard to the wisdom of putting French, Latin and algebra into the grammar course I think there can be little question. The younger children are able the more readily and unconsciously to take

hold of the new language. As far as French is concerned, the thoroughly ideal plan would be to have it taught from the kindergarten up, but as that is hardly feasible we are satisfied to take it up when the children are about eleven years old. A year and a half or two years of Latin in the grammar schools is good language training, even for those who do not enter the high school. I believe its disciplinary value and its merit as a culture study fully justify its introduction early.

"In regard to mathematics, there is a question whether putting in algebra is sufficient. We are inclined to think here it would be better to put in concrete geometry first, and then, perhaps, give a half year of algebra later on toward the end of the ninth year. Possibly a more practical reason for introducing these subjects in the grammar school is the heavy demands made upon the high school by the colleges, but I prefer to think specially of the educational reasons for the change. We are not willing to admit that we are simply preparing pupils for colleges."

[Superintendent WILLIAM H. MAXWELL, Brooklyn, N. Y.]

"In reply to your postal card, received this morning, I would say that algebra has been taught in the grammar schools for the last twenty years; inventional geometry was introduced about four years ago; manual training has not been introduced in the grammar schools, except in the form of drawing, modeling in clay, cutting and folding paper. I regard the inventional geometry as invaluable, not only as a discipline in itself, but as an introduction to the systematic study of geometry in the high school. I am in favor of introducing woodwork in the grammar schools. I believe that great care ought to be executed with regard to every boy in deciding whether he shall pursue a literary course in the high school or whether he shall enter a manual training high school. It is very difficult to determine this question unless there is some simple woodwork in the grammar schools to test a boy as to his aptitude. I think it is perfectly useless to send boys to our manual training high school who have not some natural aptitude for mechanics."

[Superintendent RODERICK W. HINE, Dedham, Mass.]

"Latin is an extra optional study in the ninth grammar grades. I am in favor of all pupils taking some language besides English in the grammar school. Pupils should be allowed to choose between Latin and some modern language. With efficient teaching this year we have secured excellent results, and as, generally speaking, only the brighter pupils have elected Latin, the scholarship of the class has

not been adversely affected. We hope to do in the ninth grade one half the work usually accomplished in the first year of the high school. Next year I hope to extend it to the eighth grade, and as soon as we introduce a modern language, to see Latin confined mainly to those who expect to take the college course in the high school.

"Manual training, including sloyd and sewing, is a part of the course in grades IV., V., VI. and VII. The boys of grades V. and VI. and VII. and the girls of grades VI. and VII. take sloyd, the girls of IV. and V. sewing. Next year boys of IV., V., VI. and VII. and girls of VII. will take sloyd, and girls of IV., V. and VI. sewing. The drawing, modeling, etc., of grades I., II. and III. prepare for this manual work.

"As outlined above, manual training is useful and feasible. The time taken from other studies where the regular teachers are efficient is not noticed.

"The work is *practical*. The children are, without exception, interested.

"With the amount of money at our disposal, about $1,000 or $1,200, it seems impossible to extend this study, with the possible exception of adding cooking in one year at high school and extending sewing through Grade VIII. This I hope to do in time."

[Superintendent Aaron Gove, Denver, Col.]

"In the overturning of the old order of things I spent the entire school year just passed in such experiments as resulted in the course of instruction sent to you. For six months the schools, principals and teachers were given the greatest liberty. Schools were closed for visits and inspection classes were assembled for instruction; meetings days and evenings, to the number of many score were held and hundreds of hours spent in discussion. The result is what you see, and while it cannot be final I trust it is many steps in advance.

"It happens to but few generations to live in the midst of such a revolution as has taken place and is taking place in methods of instruction in our common schools. Those of us who made them and worked with them ten years ago can scarcely realize what we are doing to-day."

[Miss Ellen Hyde, Principal, Framingham, Mass., Normal School.]

"I do believe in 'enriching' our present course of study by the addition of inventional geometry and either German or French. But I also believe that there is no necessary connection between the enriching of the course of study and enriching of the children's lives. The young American soul is withering from shallow culture,

but it will not be revived by additional subjects of study. We need higher ideals in home and school, some rational correlation of subjects with each other and with life, and better teachers."

[President G. S. ALBEE, Oshkosh, Wis., Normal School.]

"We have found it necessary to add a ninth year to the standard grades of our model school to secure sufficient maturity in the young people who might become candidates for promotion to the normal school work.

"We have always deemed it a duty of a normal school to constitute the grades of its school of practice as in some sense 'experiment stations,' for the development of possibilities not fully settled in corresponding work of municipalities. The introduction, however, of Latin and German is of course no innovation upon the practices in many schools. We find children of the eighth grade in languages not working well with the maturer normal school students who are also beginning the same branches; memory being more active, but the reflective powers weaker. We therefore have been compelled to section the work, that youth may be trained through different pedagogical attitudes.

"The work in geometry is prefaced by extensive training in the modeling of geometric forms, both in card-board work, clay and drawings, long before the work in geometry is attempted, deferred until the last year in the grammar department. Then some reasonably strong work is done; sometimes upon the concrete basis, at other times by the demonstration of an enunciation in the abstract and followed by concrete applications. The work in arithmetic is closed in the seventh grade, and the eighth year is devoted to algebra.

"Although not called for in your work, I will say that the eighth grade also devotes a year to English history. Previous to this the story of American history has been gathered through different channels in lower grades, but no formal determinations regarding the political significances of American history. This year the English history is thrown in as furnishing a background for American history proper, pursued in the ninth grade.

"In response to your last question, I will say that we have found the introduction of these branches attended with greater interest, in the boys particularly, and by such an enlargement in their realizations regarding the possibilities in schooling that they are stimulated to continue school work further. One of the dangers, as it has appeared to us, of the failure to introduce some of these educational windows into the lower grades has been to breed a distaste or lack of faith in further continuance of school work. By the time they

reach the higher grades of the grammar school they become somewhat weary of the iterations resulting from many years' work upon a few branches begun in their primary work, and conclude that school work is likely to grow more and more dry as the course grows more prolonged. The somewhat early cessation of some of these branches and the introduction of others, tending freely to make calls upon their earlier work while opening up new vistas for the future, seem to me thoroughly to warrant such amendment to prevailing courses."

The foregoing table (page 8) does not show all the instruction in the indicated subjects that is being carried on in the 76 places under consideration. Some cities and towns are trying the experiment in one or more of the schools, but the course followed in them does not appear in the regular prescribed course of studies; consequently their record was not included in the returns from which the table was prepared.

The masters of the grammar schools of Boston, for example, are permitted to incorporate one or more of the above-named subjects in their programs, and several of them have taken advantage of the permission. At present Latin is taught in five schools, French in nine, geometry in eight and algebra in thirty-five. Last year 249 pupils in grades VII., VIII. and IX. were taught Latin, 656 pupils in nearly all grades above the primary were taught French, 434 pupils in grades VI., VII., VIII. and IX. were taught geometry and 1,718 pupils in grades VIII. and IX. were taught algebra. Instruction was given to entire classes and to selected pupils either as an extra or as a substitute for one of the regular studies.

The experiment in most of these instances has been tried for nearly two years and the results are worthy of attention. The following expressions of the opinions of some of the masters are taken from the last report of Superintendent Seaver, March, 1896: —

"The greatest benefit from this study [algebra] — to the limited extent taught in this school — has been the help afforded in understanding quickly and clearly certain parts of the arithmetic."

"The pupils have been interested [in algebra] and the better part of the class have evidently been profited. I think the reaction on the arithmetic has been helpful."

"I have questioned some of the last year's graduates now in the high school, and they say that what they learned last year [in algebra] is a great help to them this year, and we are doing rather more this year than we did last. But is it important that they should have this help? It is a question in my mind whether this small dose of algebra is of greater educational value than a good drill in mental arithmetic, — which it has in great measure curtailed, — especially to those pupils who do not go to the high school."

"In regard to algebra . . . I believe it will tend to a better understanding of numbers in all their relations. We may not turn out quite so rapid automatic reckoning machines, but better thinkers."

"Results in algebra very good last year with the same expectation for this. The report from those who went to the high school, as to the good it was to them, more than justified the effort that was put into it. One grammar in a grammar school would make Latin a possibility in schools not a few."

"The question of English is growing more and more a vital question in our district. [This is a district where many of the children and most of the parents were born in foreign lands.]"

"Previous to this year I have been somewhat incredulous in regard to the propriety of 'enriching the course;' but the interest taken by the pupils [in French and in algebra] and the promising results obtained immediately warrant the expenditure of time and effort given to the subjects mentioned."

"The pupils have been interested in the study [of Latin] and fairly faithful. The amount of benefit received remains to be determined in the future. My own opinion is that the benefit derived has been considerable."

"Some pupils who are poor in other studies have been encouraged by their marked success in Latin, and the average pupil has made a great gain in thought power, in English vocabulary and in the technicalities of English grammar."

"The consensus of opinion of the teachers of the subjects [French, algebra, geometry] is that the pupils as a whole have gained by the introduction of the new studies. The studies from which the time has been taken for the new studies seem not to have suffered thereby."

While the ends of education in this country and in foreign countries are not identical, it cannot be said that they are wholly different, and, therefore, some reference to the courses of instruction abroad must be useful in this inquiry, especially where the present curriculum of studies has been in operation for many years.

As is well known, the subjects of instruction in England, France and Germany are determined by the central government, and are followed, with minor exceptions, in large and small places alike.

In England the public elementary schools receive children at the age of seven years. The course of seven years following the infants' school course includes the following subjects: reading, writing, arithmetic, English and geography.

English, geography, elementary science and needlework (for girls) are class subjects, but only two of them can be taken, one of which must be English. Drawing and singing may also be taught. Any two of the following subjects may be taken by pupils of standards V., VI , VII. (last three years of the course): algebra, Euclid and mensuration, mechanics, Latin, French, animal physiology, botany, principles of agriculture, physics, domestic economy (for girls).

In France the subjects of instruction in the elementary schools (*écoles primaires élémentaires*) are as follows: —

1. Subjects and exercises which pertain to physical education, including hygiene, gymnastics, military exercises (without arms), manual training.

2. Subjects which pertain to intellectual education, including reading, writing, French language, history, geography, civics, arithmetic, geometry, drawing, elementary science (animals, plants, minerals, physiology and the elements of physics and chemistry), agriculture, singing.

3. Subjects pertaining to moral education, including the memorizing of poems, and regular talks and lessons upon duties in the family, in society and in the State.

The above course covers seven years, from the age of six to thirteen years.

The courses of higher schools, the *écoles primaires supérieures* and the *cours complémentaires*, are based directly upon the work done in the lower schools. The first year of these courses corresponds with the eighth or ninth year of our schools and adds algebra and either German or English to the above subjects.

In Germany there are, in general, two kinds of elementary schools, the first and by far the most numerous being the public schools, which are free in most parts of the empire. These schools, known as the people's schools (*Volkschulen*) or community schools (*Gemeinde-schulen*), have a course from

six to eight years in length, generally eight, comprising the following subjects: religion, language (German), reading, writing, arithmetic, history, geography, natural history, geometry, physics, drawing, singing and gymnastics. In some places a foreign language (either Latin, French or English) and algebra are added to the course. This course, unlike the elementary school courses in France and America, is not directly connected with the high school courses, inasmuch as the latter courses demand much more foreign language study in the first six or eight years of school life than is given in the common or people's school.

The second kind of elementary schools are included in the lower grades of the various kinds of high schools and the preparatory schools (*Vorschulen*), which generally have a course three years in length. Upon the supposition that the elementary course in these schools covers a period of eight years, three years in the preparatory school and five years in the high school proper, the time given to Latin is five years; to French or English, two to four years; and to Greek, two years, in addition to the subjects mentioned above. The lower grade of high schools does not teach Greek and the girls' high schools do not teach either Latin or Greek.

The committee appointed by the National Educational Association, known as the "Committee of Ten," recommended in its report of 1893, in respect to subjects not ordinarily pursued in grammar schools, (1) that Latin be begun in the grammar school, (2) that German or French be begun the fifth year of school and continue through the course of eight years, (3) that algebraic expressions and symbols be used in simple equations in connection with arithmetic, (4) that concrete geometry be studied from the fifth to the eighth year inclusive, and (5) that natural history and elementary science be taken throughout the course.

The report of the Committee of Fifteen, read at the Cleveland meeting of the Department of Superintendence, in 1895, recommended that the following subjects be taught (the figures denote the year of school): reading, 1–8; penmanship, 1–6; spelling lists, 4–6; language and grammar, 1–7; Latin or French or German, 8; arithmetic, 1–6; algebra, 7, 8; geography, 2–8; natural science and hygiene, 1–8; history of United

States, 7, 8; Constitution of United States, 8; general history and biography, 1–8; physical culture, 1–8; vocal music, 1–8; drawing, 1–8; manual training, sewing and cooking, 7, 8.

From a review of the courses pursued in the English, French and German elementary schools and the courses recommended by the Committee of Ten and the Committee of Fifteen, it will be seen that there is practical unanimity in respect to carrying on, during the whole or a part of the time, reading, language, penmanship (including spelling, composition, writing and grammar), arithmetic, elementary science or nature study, physiology and hygiene, geography, history.

The points of agreement or disagreement in all other subjects appear in the following table: —

TABLE III. — *Showing the Place which is given to a Foreign Language, Algebra, Geometry and Manual Training in English, French and German Courses and in Courses recommended by the Committee of Ten and Committee of Fifteen.*

[Letters used to denote the courses are used as follows: E. English Public Elementary School. Fr. French Elementary School. G. V. German People's School. G. G. Lower classes of the German Gymnasium and the Preparatory Department. G. R. Lower classes of the German Real-Gymnasium and the Preparatory Department. G. O. Lower classes of the German Oberrealschul and the Preparatory Department. T. Report of Committee of Ten. F. Report of Committee of Fifteen.]

Latin, . . .	E.[1]	Fifth, sixth and seventh years.
	G. G.	Fourth to eighth year.
	G. R.	Fourth to eighth year.
	T.	Time not given.
	F.	Either Latin, French or German, eighth year.
One or more modern languages.	E.[1]	Fifth, sixth and seventh years.
	G. G.	Seventh and eighth years.
	G. R.	Sixth to eighth year, French; eighth year, English.
	G. O.	Fourth to eighth year, French; seventh and eighth years, English.
	T.	German or French, optional, fifth to eighth year.
	F.	Either Latin, French or German, eighth year.
Algebra, . .	E.[1]	Fifth, sixth and seventh years.
	G. G.	Custom varies as to time and extent.
	G. R.	Custom varies as to time and extent.
	G. O.	Custom varies as to time and extent.
	T.	With arithmetic in latter part of the course.
	F.	Seventh and eighth years.
Geometry, . .	E.[1]	Fifth, sixth and seventh years.
	Fr.	All grades.
	G. V.	Seventh and eighth years, constructive and demonstrative.
	G. G.	Custom varies as to time and extent.
	G. R.	Custom varies as to time and extent.
	G. O.	Custom varies as to time and extent.
	T.	One period a week during last four years.
Manual training, .	E.	Needlework for girls required in all grades.
	Fr.	All grades, – cardboard and woodwork for boys; needlework for girls.
	G. V.	Sewing required in higher grades of girls' schools.
	F.	Seventh and eighth years.

[1] Optional; see page 19.

The foregoing testimony of practice and opinion in respect to suitable subjects of instruction in elementary schools seems to be convincing so far at least as the usefulness and desirability of including some subjects in the curriculum of those schools which have hitherto been begun in the high school. How far such extension of the elementary school curriculum should be carried will depend largely upon the way in which the subjects are taught or upon what aspects the various subjects are presented. As we come to know the choices and capacities of pupils, we find that breadth rather than depth of knowledge is needed in the earlier grades, and that the elements of any subject may fittingly be presented to young children. But the mistake must not be made of anticipating the child's mental growth by presenting as a science or as philosophy what ought to be matters of observation or fact. The present sharp division line between the grammar school course and the high school course may be eliminated by an extension of the high school studies into the lower grades, but the existing difficulty will be greatly enhanced if these studies are brought down in their present form. Such an extension of studies instead of enrichment would be impoverishment and waste.

Again, in choosing subjects of instruction for the elementary school course, the difficulty of a multiplicity of studies must not be overlooked. So far as a correlation of kindred subjects, either in the course of studies or in the teaching, can help to meet the difficulty it should be made. And finally, the immediate as well as ultimate and general needs of the children should be met so far as circumstances will permit. While it is true that the education of children and youth should be rounded off at every stage, and that what is proper preparation for a higher grade of instruction should be a proper preparation for life, it is also true that a differentiation of studies somewhere in the course, according to the taste and needs of pupils, may be highly desirable whenever it can be done without detriment to the best interests of the schools. These considerations, namely, the recognition of the laws of mental growth and development, the avoidance of multiplicity and complexity and the differentiation of work required or permitted, should receive careful attention in the apportionment of subjects. To assist in the solution of these questions it seems desirable to ascertain

the relative value of studies as expressed in the best programs in actual use at the present time and as recommended by the wisest educators.

Time Limits.

It is evident that the time to be given to each branch of instruction must depend not only upon its value as an aid in securing the ends of education, but also upon its value as compared with that of all other branches. As in determining what subjects should be pursued, so in allotting the time to be given to each subject, reference should be made to the course of studies which is followed in the best schools. The time programs of such schools ought to furnish the best evidence of a wise and practicable apportionment of time to the various subjects. This question will be greatly simplified if a classification and grouping be made of all subjects that are likely to constitute the course. There may be a difference of opinion as to the basis of classification and as to the number of groups to be made, so far as a proper presentation of subjects is concerned, but as the present purpose of grouping is simply to ascertain the amount of time which should be given to the various subjects in the construction of a course of studies, the division here will be made on lines which have been made already in other investigations, as follows: —

1. Language, including reading, writing, language lessons, grammar, Latin, French and German.
2. Mathematics, including number work, arithmetic, algebra and geometry.
3. History, including literature, civil government, biography and history proper.
4. Natural science, including nature study, elementary science and geography.

For convenience of comparison with results contained in other reports no account will be taken for the present of subjects not named in the above list, viz., singing, drawing and manual training. The place and time of these subjects in the program will be discussed later.

A careful examination of the seventy-six courses under consideration shows great differences in respect to the relative amounts of time given to the various groups of subjects named.

These differences may be accounted for in part perhaps by the differences of conditions under which the schools of the various cities and towns are carried on, but more I believe by the indifference on the part of some school officials to the highest ends of education and to a proper adjustment of the subjects to be taught. Little good would be accomplished by publishing the details of these courses, and an average of times reported for each subject or group of subjects would not give a reliable standard of values such as is desirable in making a course of studies. A nearer approach to such a standard will be made by giving the details and averages of a few courses with the object in view of ascertaining the relative time given to subjects of limited and more extended curricula. I have, therefore, gathered the following facts from ten typical courses which were made with the most care by persons of ability and good judgment, and which have been in successful operation in schools of highest reputation. The table contains the number of minutes a week that is given in recitation to a pupil or group of pupils in each grade and in each subject of the four groups named above. It will be seen that literature is classed with history, it being assumed that pupils acquire the mechanical process of learning to read during the first three years, and that all reading done after the third year is either in literature or history.

Reference will be made later to some modification of the figures here given : —

TABLE IV. — *Showing the Number of Minutes a Week spent by a Pupil or Group of Pupils in Recitation in Each Grade and Subject, and the Percentage of Time given for Each Group of Studies.*

[Figures enclosed in parentheses indicate the time that is given to an optional or alternative study. Figures above parentheses indicate the *average* time, weekly, during the year.]

Course A.

	BRANCHES.	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.	Grade 9.	Per Cent.
I.	Reading,	120	150	150	*-	*-	*-	*-	*-	*-	45.7
	Writing,	100	100	75	100	60	60	60	60	60	
	Spelling (lists),	-	-	75	75	100	100	100	100	100	
	Language and compo'n,	45	60	75	60	60	60	60	60	60	
	Grammar,	-	-	-	80	60	75	75	60	60	
II.	Arithmetic,	75	75	75	125	125	125	125	100	100	16.8
	Bookkeeping,	-	-	-	-	-	-	-	-	30	
III.	Nature study,	30	60	60	60	60	60	60	60	60	25.1
	Physiology and hyg'ne,	15	15	30	30	30	30	30	30	30	
	Geography,	15	30	30	100	125	125	100	90	60	
IV.	Literature,	-	-	-	100	100	100	75	75	75	12.2
	Civil gov't and history,	-	-	-	-	-	-	-	80	90	
	I. Per cent.,	66.2	63.2	65.7	43.3	38.8	40.1	43.0	39.1	38.6	-
	II. Per cent.,	18.7	15.3	13.1	17.1	17.3	16.9	18.2	13.9	17.9	-
	III. Per cent.,	15.0	21.4	21.0	26.0	29.8	29.2	27.7	25.1	20.6	-
	IV. Per cent.,	-	-	-	13.6	13.8	13.6	10.9	21.6	22.6	-

Course B.

I.	Reading,	120	150	135	*-	*-	*-	*-	*-	*-	44.2
	Writing,	120	120	60	60	60	60	45	60	-	
	Spelling (lists),	-	50	40	40	40	40	40	45	-	
	Language and compo'n,	120	150	75	75	100	80	80	150	150	
	Grammar,	-	-	-	-	-	80	80	150	150	
II.	Arithmetic,	50	75	75	75	125	125	125	150	150	16.4
	Bookkeeping,	-	-	-	-	-	-	-	-	60	
III.	Nature study,	100	100	45	45	50	40	40	40	30	21.0
	Physiology and hyg'ne,	50	50	20	20	20	20	20	25	150	
	Geography,	-	20	30	45	100	100	75	60	-	
IV.	Literature,	-	-	-	135	175	125	100	100	120	18.2
	Civil gov't and history,	-	10	15	15	20	20	50	90	150	
	I. Per cent.,	64.2	64.8	62.6	34.3	28.9	37.6	37.4	46.4	31.2	-
	II. Per cent.,	9.9	10.3	15.1	14.7	18.1	18.1	19.0	17.2	21.8	-
	III. Per cent.,	26.7	23.4	19.1	21.5	24.6	23.1	20.6	14.3	18.7	-
	IV. Per cent.,	-	1.3	3.0	29.4	28.2	21.0	23.0	21.8	28.1	-

* Classed with literature-history.

TABLE IV. — *Showing Number of Minutes a Week, etc.* — Continued.

Course C.

	BRANCHES.	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.	Per Cent.
I.	Reading,	360	300	300	*-	*-	*-	*-	*-	45.5
	Writing,	90	105	105	105	60	60	-	-	
	Spelling (lists),		90	90	90	90	60	60	60	
	Language and compo'n,	200	105	105	105	120	90	90	150	
	Grammar,	-	-	-	-	-	150	90	60	
II.	Arithmetic,	150	250	250	240	275	225	225	195	27.4
	Geometry,	-	-	-	-	-	-			
	Algebra,	-	-	-	-	-	-	80	90	
III.	Physiology and hyg'ne,	15	15	15	15	15	15	15	15	11.0
	Geography,	-	-	-	-	225	225	225	-	
IV.	Literature,	-	-	-	300	180	150	150	150	15.0
	Civil gov't and history,	-	-	-	-	-	-	-	225	
	I. Per cent.,	79.7	69.3	69.3	35.0	27.9	36.9	25.6	28.5	-
	II. Per cent.,	18.4	28.9	28.9	28.0	28.4	23.0	32.6	30.1	-
	III. Per cent.,	1.8	1.7	1.7	1.7	24.8	24.6	25.6	1.5	-
	IV. Per cent.,	-	-	-	35.0	18.6	15.3	16.0	39.6	-

Course D.

	BRANCHES.	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.	Grade 9.	Per Cent.
I.	Reading,	150	200	200	*-	*-	*-	*-	*-	*-	40.6
	Writing,	75	75	75	90	90	90	90	-	-	
	Spelling (lists),	-	-	-	50	50	50	40	20	20	
	Language and compo'n,	75	75	100	200	200	200	120	120	90	
	Grammar,	-	-	-	-	-	-	120	120	90	
II.	Arithmetic,	100	200	200	150	150	150	150	150	150	22.9
	Bookkeeping,	-	-	-	-	-	-	-	-	80	
	Geometry,	-	-	-	-	-	-	-	60	80	
III.	Nature study,	80	80	80	30	30	30	30	30	80	18.5
	Physiology and hyg'ne,	20	20	20	30	30	30	30	30	30	
	Geography,	-	-	-	120	120	120	120	120	-	
IV.	Literature,	-	-	-	200	200	175	175	120	120	17.8
	Civil gov't and history,	-	-	-	-	-	30	30	90	120	
	I. Per cent.,	60.0	53.8	55.5	39.0	39.0	38.8	40.8	30.2	23.2	-
	II. Per cent.,	20.0	30.7	29.6	17.2	17.2	17.1	16.5	24.4	36.0	-
	III. Per cent.,	20.0	15.3	14.8	20.6	20.6	20.5	19.8	20.9	12.7	-
	IV. Per cent.,	-	-	-	22.9	22.9	23.4	22.6	24.4	27.9	-

* Classed with literature-history.

TABLE IV. — *Showing Number of Minutes a Week, etc.* — Continued.

Course E.

	BRANCHES.	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.	Grade 9.	Per Cent.
I.	Reading,	150	160	210	*-	*-	*-	*-	*-	*-	47.5
	Writing,	100	100	100	120	120	125	120	120	60 (120)	
	Spelling (lists),	80	100	100	80	60	60	40	40	45	
	Language and compo'n,	50	40	120	160	160	100	30	30	45	
	Grammar,	-	-	-	-	-	30	75	100	115	
II.	Arithmetic,	82	125	115	170	125	150	120	150	150	19.1
	Algebra,	-	-	-	-	-	-	-	-		
	Bookkeeping,	-	-	-	-	-	-	-	-	60 (120)	
III.	Nature study,	40	30	60	60	40	50	40	40	45	18.6
	Physiology and hyg'ne,	10	15	12	20	40	30	40	40	35	
	Geography,	-	-	40	120	90	80	80	100	57 (115)	
IV.	Literature,	-	-	-	150	100	90	120	120	140	14.5
	Civics and history,	-	-	-	-	-	60	40	100	57 (115)	
	I. Per cent.,	71.4	70.1	70.0	40.9	46.2	40.6	37.5	34.5	32.7	-
	II. Per cent.,	17.7	21.9	15.1	19.3	17.1	19.3	17.0	17.8	25.9	-
	III. Per cent.,	10.8	7.8	14.7	22.7	23.1	20.6	22.6	21.4	16.9	-
	IV. Per cent.,	-	-	-	17.0	13.6	19.3	22.6	26.1	24.3	-

Course F.

I.	Reading,	150	150	200	*-	*-	*-	*-	*-	*-	38.8
	Writing,	100	75	150	75	50	40	40	40	30	
	Spelling (lists),	-	150	200	50	50	-	-	-	-	
	Language and compo'n,	100			100	100	100	180	180	210	
	Grammar,	-	-	-	-	-					
II.	Arithmetic,	25	75	100	125	125	125	150	150	90	18.1
	Algebra,	-	-	-	-	-	-	-	-	90	
	Bookkeeping,	-	-	-	-	-	-	-	-	(120)	
	Geometry,	-	-	-	-	-	-	-	-	(120)	
III.	Elementary science,	75	75	75	75	90	90	100	100	120	22.0
	Physiology and hyg'ne,	-	-	-	-	20	20	30	30	30	
	Geography,	-	-	-	80	90	90	90	60	90	
IV.	Literature,	-	-	-	200	150	150	150	150	150	21.0
	Civics and history,	-	-	-	15	50	60	60	90	90	
	I. Per cent.,	77.7	71.4	75.8	31.2	25.8	20.7	27.5	27.5	23.5	-
	II. Per cent.,	5.5	14.2	13.7	17.3	16.1	18.5	18.7	18.7	29.4	-
	III. Per cent.,	16.6	14.2	10.3	21.5	25.8	29.6	27.5	23.7	23.5	-
	IV. Per cent.,	-	-	-	29.8	32.2	31.1	26.2	30.0	23.5	-

* Classed with literature-history.

TABLE IV. — *Showing Number of Minutes a Week, etc.* — Continued.

Course G.

	BRANCHES.	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.	Grade 9.	Per Cent.
I.	Reading,	150	180	180	*–	*–	*–	*–	*–	*–	44.3
	Writing,	60	60	60	60	60	60	60	30	–	
	Spelling (lists),	60	60	60	60	60	60	60	30	30	
	Lang., comp. and gram.,	60	120	120	120	120	120	120	120	120	
	Latin,	–	–	–	–	–	–	–	(120)	(120)	
II.	Arithmetic and geom'y,	80	80	80	120	120	120	120	60 (120)	60 (120)	17.8
	Algebra,	–	–	–	–	–	–	–	60 (120)	60 (120)	
	Bookkeeping,	–	–	–	–	–	–	–	–	30	
III.	Ele. sci. and physiology,	60	60	60	120	120	60	60	60	60	19.4
	Geography,	–	–	–	60	60	120	60 (120)	60 (120)	60 (120)	
IV.	Literature,	–	–	–	180	180	120	120	60	60	18.3
	Civics and history,	–	–	–	–	–	120	60 (120)	60 (120)	60 (120)	
	I. Per cent.,	70.2	75.0	75.0	33.2	33.3	30.7	36.3	33.3	27.7	–
	II. Per cent.,	17.0	14.2	14.2	16.6	16.6	15.3	18.1	22.2	27.7	–
	III. Per cent.,	12.7	10.7	10.7	25.1	25.0	23.0	18.1	22.2	22.2	–
	IV. Per cent.,	–	–	–	24.9	25.0	30.7	27.2	22.2	22.2	–

Course H.

	BRANCHES.	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.	Per Cent.
I.	Reading,	150	200	125	*–	*–	*–	*–	*–	34.4
	Writing,	75	75	75	75	50	50	30	30	
	Spelling (lists), Language and compo'n,	15	15	100	100	100	125	20	20	
	English grammar,	–	–	–	–	–	–	120	120	
	Latin,	–	–	–	–	–	–	(120)	(120)	
II.	Arithmetic,	120	120	100	100	100	125	90	60	20.9
	Algebra,	–	–	–	–	–	–	(60)	90	
	Geometry,	–	–	–	–	–	50	(60)	–	
III.	Elementary science, physiology and hygiene.	75	75	75	75	75	75	90	90	23.2
	Geography,	–	–	60	60	60	80	120	120	
IV.	Literature,	–	–	–	125	125	125	90	90	21.3
	Civics and history,	–	–	60	60	60	60	120	120	
	I. Per cent.,	55.1	59.7	50.4	29.4	26.3	25.3	22.9	22.9	–
	II. Per cent.,	27.5	24.7	16.8	16.8	17.5	25.3	20.2	20.2	–
	III. Per cent.,	17.2	15.4	22.6	22.6	23.6	22.4	28.3	28.3	–
	IV. Per cent.,	–	–	10.0	31.0	32.4	26.8	28.3	28.3	–

* Classed with literature-history.

TABLE IV. — *Showing Number of Minutes a Week, etc.* — Concluded.

Course I.

	BRANCHES.	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.	Grade 9.	Per Cent.
I.	Reading,	225	200	300	*-	*-	*-	*-	*-	*-	43.2
	Writing,	300	75	60	90	75	40	50	60	-	
	Spelling (lists),	-	75	75	90	60	90	90	50	-	
	Language and compo'n,	150	75	300	165	175	90	60	100	40	
	English grammar,	-	-	-	-	-	-	60	120	(80)	
	Latin,	-	-	-	-	-	-	-	-	(200)	
II.	Arithmetic,	-	100	300	200	175	120	90	140	40 (80)	18.4
	Algebra,	-	-	-	-	-	-	-	-	120	
	Bookkeeping,	-	-	-	-	-	-	-	-	40 (80)	
	Geometry,	-	-	-	-	-	30	45	60	-	
III.	Elementary science,	15	30	75	60	120	60	60	50	40	20.1
	Physiology and hygiene,	15	15	15	60	60	60	60	60	-	
	Geography,	-	-	-	200	175	90	90	100	(80)	
IV.	Literature,	-	-	-	180	300	150	120	120	160	18.1
	Civics and history,	-	-	-	-	-	60	60	120	160	
	I. Per cent.,	95.7	74.5	65.3	33.0	27.1	27.8	33.1	33.6	15.7	-
	II. Per cent.,	-	17.5	26.6	19.1	15.3	18.9	17.1	20.4	26.3	-
	III. Per cent.,	4.2	7.8	8.0	30.6	31.1	26.5	26.7	21.4	15.7	-
	IV. Per cent.,	-	-	-	17.2	26.3	26.5	22.9	24.4	42.1	-

Course J.

	BRANCHES.	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.	Per Cent.
I.	Reading,	150	200	150	*-	*-	*-	*-	*-	46.6
	Writing,	150	100	100	100	75	60	60	30	
	Spelling (lists),	75	75	75	75	45	50	75	60	
	Language and compo'n,	100	45	75	125	120	90	60	60	
	Grammar,	-	-	-	-	-	-	(150)	(120)	
	Latin,	-	-	-	-	-	-	(150)	(120)	
II.	Arithmetic,	150	100	100	125	120	90	60	60	16.2
	Algebra,	-	-	-	-	-	-	-	60	
	Geometry,	-	-	-	-	-	-	30	30	
III.	Elementary science,	60	40	60	100	60	60	-	60	19.4
	Physiology and hyg'ne,	-	-	20	20	-	-	60	-	
	Geography,	-	-	30	125	120	90	60	90	
IV.	Literature,	-	-	-	125	150	150	90	90	17.5
	History,	-	-	-	-	90	90	120	90	
	I. Per cent.,	69.3	75.0	60.6	37.7	30.7	29.4	45.0	36.0	-
	II. Per cent.,	21.8	17.8	15.1	15.7	15.3	13.2	11.7	20.0	-
	III. Per cent.,	8.7	7.1	24.2	30.8	23.0	22.0	15.6	20.0	-
	IV. Per cent.,	-	-	-	15.7	30.7	35.2	27.4	24.0	-

* Classed with literature-history.

Resemblances and differences of times indicated in the foregoing schedules will appear in the following tables: —

TABLE V. — *Showing Average Per Cent. of Recitation Time given to Each of Four Groups of Studies pursued in Ten Cities and Towns.*

COURSE.	Language Group.	Mathematics Group.	Science Group.	Literature-History Group.
A, ...	45.7	16.8	25.1	12.2
B, ...	44.2	16.4	21.0	18.2
C, ...	45.5	27.4	11.0	15.0
D, ...	40.6	22.9	18.5	17.8
E, ...	47.5	19.1	18.6	14.5
F, ...	38.8	18.1	22.0	21.0
G, ...	44.3	17.8	19.4	18.3
H, ...	34.4	20.9	23.2	21.3
I, ...	43.2	18.4	20.1	18.1
J, ...	46.6	16.2	19.4	17.5
Average, ...	43.0	19.4	19.8	17.4

TABLE VI. — *Showing the Percentage of Recitation Time given in Each Grade to Each of Four Groups of Studies pursued in Ten Cities and Towns.*

GRADE OR YEAR OF SCHOOL.	Group of Studies.	Course A.	Course B.	Course C.	Course D.	Course E.	Course F.	Course G.	Course H.	Course I.	Course J.	Average.
1, . .	I.	66.2	64.2	79.7	60.0	71.4	77.7	70.2	55.1	95.7	69.3	70.9
	II.	18.7	9.9	18.4	20.0	17.7	5.5	17.0	27.5	-	21.8	15.6
	III.	15.0	26.7	1.8	20.0	10.8	16.6	12.7	17.2	4.2	8.7	13.4
	IV.	-	-	-	-	-	-	-	-	-	-	-
2, . .	I.	63.2	64.8	69.3	53.8	70.1	71.4	75.0	59.7	74.5	75.0	67.6
	II.	15.3	10.3	28.9	30.7	21.9	14.2	14.2	24.7	17.5	17.8	19.5
	III.	21.4	23.4	1.7	15.3	7.8	14.2	10.7	15.4	7.8	7.1	12.4
	IV.	-	1.3	-	-	-	-	-	-	-	-	.1
3, . .	I.	65.7	62.6	69.3	55.5	70.0	75.8	75.0	50.4	65.3	60.6	65.0
	II.	13.1	15.1	28.9	29.6	15.1	13.7	14.2	16.8	26.6	15.1	18.8
	III.	21.0	19.1	1.7	14.8	14.7	10.3	10.7	22.6	8.0	24.2	14.7
	IV.	-	3.0	-	-	-	-	-	10.0	-	-	1.3
4, . .	I.	43.3	34.3	35.0	39.0	40.9	31.2	33.2	29.4	33.0	37.7	35.7
	II.	17.1	14.7	28.0	17.2	19.3	17.3	16.6	16.8	19.1	15.7	18.1
	III.	26.0	21.5	1.7	20.6	22.7	21.5	25.1	22.6	30.6	30.8	22.3
	IV.	13.6	29.4	35.0	22.9	17.0	29.8	24.9	31.0	17.2	15.7	23.6
5, . .	I.	38.8	28.9	27.9	39.0	46.2	25.8	33.3	26.3	27.1	30.7	32.4
	II.	17.3	18.1	28.4	17.2	17.1	16.1	16.6	17.5	15.3	15.3	17.8
	III.	29.8	24.6	24.8	20.6	23.1	25.8	25.0	23.6	31.1	23.0	25.1
	IV.	13.8	28.2	18.6	22.9	13.6	32.2	25.0	32.4	26.3	30.7	24.3

TABLE VI. — *Showing the Percentage of Recitation Time, etc.* — Concluded.

GRADE OR YEAR OF SCHOOL.	Group of Studies.	Course A.	Course B.	Course C.	Course D.	Course E.	Course F.	Course G.	Course H.	Course I.	Course J.	Average.
6, . . .	I.	40.1	37.6	36.9	38.8	40.6	20.7	30.7	25.3	27.8	29.4	32.7
	II.	16.9	18.1	23.0	17.1	19.3	18.5	15.3	25.3	18.9	13.2	18.5
	III.	29.2	23.1	24.6	20.5	20.6	29.6	23.0	22.4	26.5	22.0	24.1
	IV.	13.6	21.0	15.3	23.4	19.3	31.1	30.7	26.8	26.5	35.2	24.2
7, . . .	I.	43.0	37.4	25.6	40.8	37.5	27.5	36.3	22.9	33.1	45.0	34.9
	II.	18.2	19.0	32.6	16.5	17.0	18.7	18.1	20.2	17.1	11.7	18.9
	III.	27.7	20.6	25.6	19.8	22.6	27.5	18.1	28.3	26.7	15.6	23.2
	IV.	10.9	23.0	16.0	22.6	22.6	26.2	27.2	28.3	22.9	27.4	22.7
8, . . .	I.	39.1	46.4	28.5	30.2	34.5	27.5	33.3	22.9	33.6	36.0	33.2
	II.	18.9	17.2	30.1	24.4	17.8	18.7	22.2	20.2	20.4	20.0	20.4
	III.	25.1	14.3	1.5	20.9	21.4	23.7	22.2	28.3	21.4	20.0	19.8
	IV.	21.6	21.8	39.6	24.4	26.1	30.0	22.2	28.3	24.4	24.0	26.2
9, . . .	I.	38.6	31.2	-	23.2	32.7	23.5	27.7	-	15.7	-	27.5
	II.	17.9	21.8	-	36.0	25.9	29.4	27.7	-	26.3	-	26.4
	III.	20.6	18.7	-	12.7	16.9	23.5	22.2	-	15.7	-	18.6
	IV.	22.6	28.1	-	27.9	24.8	23.5	22.2	-	42.1	-	27.2

While some quite astonishing differences appear in the foregoing tables there is substantial agreement in many essential features. All agree in giving the so-called content studies a large share of time. In even the best schools of a few years ago science, literature and history held a minor place in the program, while mathematics and the formal side of language absorbed a large share of the time. The same is true to-day of our poorer schools. The courses under consideration agree with considerable unanimity in giving to the science group and to the literature-history group about the same time that is allowed for mathematics, or about one fifth of the time for each group. As the pupils progress, the average time allotment for mathematics decreases and that for the other two groups increases. The relatively large proportion of time given to mathematics in the ninth grade is accounted for from the fact that in three of the courses extra time is given to algebra, geometry and bookkeeping.

It will be seen in Table VI. that the average time given to language falls off suddenly after the third grade from about two thirds to about one third of the time allotted for all. This

is accounted for largely by the fact that reading after the third year is counted as literature, it being assumed that the process of learning to read is completed at the end of that year and that all reading after that time should be classed with literature and history. But as a matter of fact, in the schools under consideration not all of the first three years is taken for the mechanical process of learning to read. It is safe to say that one half of the reading time in the third grade and one quarter of the time in the second grade are given to reading such pieces as properly come under the fourth group of studies. It is also to be observed that the foregoing tables were prepared from daily programs which in no case included the general exercises in memory gems, or recitations and declamations, and to story telling in the primary grades. These subjects would also properly be classed with the literature-history group. By a careful estimate based upon observation and special inquiry there should be added on account of these exercises an average of 40 minutes a week to the time given to Group IV. in the primary grades and 20 minutes a week to the same group in all other grades. With a revision of the time schedule (Table V.) in respect to the added time actually given to literature and history, the average percentage of time given to each of the four groups in all grades will appear as follows: —

TABLE VII. — *Showing the Average Percentage of Time given in Ten Courses to Each of the Four Groups of Studies in Each Grade.*

GROUP OF STUDIES.	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.	Grade 9.	Average.
I. Language, . . .	65.7	56.0	49.1	34.7	31.5	32.0	34.3	32.5	27.1	40.3
II. Mathematics, . . .	14.4	18.5	17.1	17.6	17.4	18.1	18.5	20.0	25.9	18.6
III. Science, ...	12.4	12.1	12.8	21.6	24.5	23.6	22.7	19.4	18.2	18.5
IV. Literature-history, .	7.4	13.1	20.8	25.8	26.2	25.8	24.2	27.7	28.6	22.1

The percentages contained in the above table may be regarded as a fair average of allotments made in the designated groups of studies in our best schools, and represent some of the best thought of the country respecting the relative value of these groups. It will be interesting and useful to compare these allotments with those recommended in other reports and prescribed in courses of study of established merit.

Report of the Committee of Ten. — The Committee of Ten makes several recommendations as to studies which should be pursued in the primary and grammar schools, but gives specific times for only a few. Its recommendations as to the number of periods to be given during the last four years of the grammar school course are as follows: —

Fifth Grade. — German or French, 5; concrete geometry, 1; science, 5; natural history, 2; biography and mythology, 3.

Sixth Grade. — German or French, 4; concrete geometry, 1; science, 5; natural history, 2; biography and mythology, 3.

Seventh Grade. — German or French, 3; concrete geometry, 1; science, 5; natural history, 2; history and civil government, 3.

Eighth Grade. — English grammar, 3; German or French, 3; concrete geometry, 1; science, 5; natural history, 2; Greek and Roman history, 3.

A school day of 5½ hours, or 330 minutes, which allows 40 minutes for physical exercises, recesses and devotional exercises, yields 290 minutes for recitation and study. If from this 90 minutes are taken for study there are left 200 minutes for recitation. Giving the shortest time for a period recommended by the committee for the above-named subjects there would be left from 68 to 92 minutes a day for reading, writing, composition, arithmetic and geography, not counting Latin, which is recommended to be begun in the grammar school, and singing, drawing and manual training, which are not named in the report. It is evident that, for any help in establishing a true proportion of time for the various elementary school studies, this report is of little value. Yet in emphasizing so strongly as it does the value of elementary science and a modern language, in giving four years of nearly full time to history and in placing geography and arithmetic on an equality so far as time is concerned, the report will greatly aid in determining the place or rank of approved studies.

Report of the Committee of Fifteen. — Specific times for all subjects to be taught are given in the report of the Committee of Fifteen, from which is arranged the following table for comparison with those already made: —

TABLE VIII. — *Showing the Number of Minutes a Week recommended by the Committee of Fifteen to be spent in Recitation by a Pupil or Group of Pupils in Each Grade and Subject, and the Percentage of Time for Each Group of Subjects.*

	BRANCHES.	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.	Per Cent.
	Reading,	150	150	100	*-	*-	*-	*-	*-	38.8
	Writing,	150	150	100	100	75	75	-	-	
	Spelling (lists),	-	-	-	80	100	100	-	-	
	Composition and grammar,	75	75	100	100	125	125	150	-	
	Latin,	-	-	-	-	-	-	-	150	
II.	Arithmetic,	60	60	100	100	125	125	-	-	15.1
	Algebra,	-	-	-	-	-	-	150	150	
III.	Geography,	60	60	60/100	100	125	125	90	90	21.0
	Natural science and hygiene,	60	60	60	60	60	60	60	60	
IV.	United States history,	-	-	-	-	-	-	150	150/	24.9
	United States constitution,	-	-	-	-	-	-	-	/150	
	General history,	60	60	60	60	60	60	60	60	
	Literature,	-	-	-	100	125	125	150	150	
I.	Per cent.,	60.9	60.9	50.0	40.0	37.7	37.7	18.5	18.5	-
II.	Per cent.,	9.7	9.7	16.6	14.2	15.7	15.7	18.5	18.5	-
III.	Per cent.,	19.5	19.5	23.3	22.8	23.2	23.2	18.5	18.5	-
IV.	Per cent.,	9.7	9.7	10.0	22.8	23.2	23.2	44.4	44.4	-

* Classed with literature-history.

It will be seen that the time allotted for mathematics is less throughout the course than is given in Table VII. The amount of time also in science and history is considerably larger in some grades and more variable than is given in the averages contained in the table. In the main, however, there are several points of agreement between the two tables. These points of agreement will aid materially in the construction of a time program.

CALIFORNIA REPORT. — An important investigation is now being made by a committee of the California Council of Education, to consider the question of a uniform course of study for the elementary schools of the State. The first report of the committee was presented a year ago, in which were given some opinions of eminent educators and the conclusions of school superintendents and county institutes. One of the questions asked was in reference to the proportion of time which should be given in each grade to each of the four groups of subjects named above. The committee received many replies to this

question from which they selected two examples which might serve as representatives of the whole number. The replies are as follows: —

Report of Santa Cruz County Institute.

	1st, 2d and 3d Years.	4th, 5th and 6th Years.	7th, 8th and 9th Years.
Language,	½ of the time,	½ of the time,	½ of the time.
Mathematics,	1-6th " "	¼ " "	¼ " "
History,	1-6th " "	1-6th " "	¼ " "
Science,	1-6th " "	¼ " "	¼ " "

Report prepared by the Joint Institute of the City and County of Sacramento.

[The numbers represent the per cent. of the whole time given to the group of studies indicated.]

GRADE.	Language.	History (including Literature).	Arithmetic (Numbers).	Natural Science (including Geography).
1,	35	5	5	5
2,	50	20	15	15
3,	50	15	25	10
4 and 5,	50	15	20	15
6 and 7,	40	15	25	20
8 and 9,	35	20	25	20

Arranging these estimates in a table similar to previous tables, we have the following: —

TABLE IX. — *Showing the Percentage of Time recommended for Each Group of Studies in Two Counties of California.*

REPORT OF	Group of Studies.	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.	Grade 9.	Average Per Cent.
Santa Cruz County Institute.	Language,	50.0	50.0	50.0	33.3	33.3	33.3	25.0	25.0	25.0	36.1
	Mathematics,	16.6	16.6	16.6	25.0	25.0	25.0	25.0	25.0	25.0	22.2
	Science,	16.6	16.6	16.6	25.0	25.0	25.0	25.0	25.0	25.0	22.2
	Literature-history,	16.6	16.6	16.6	16.6	16.6	16.6	25.0	25.0	25.0	19.4
Joint Institute of the City and County of Sacramento.	Language,	85.0	50.0	50.0	50.0	50.0	40.0	40.0	35.0	35.0	48.3
	Mathematics,	5.0	15.0	25.0	20.0	20.0	25.0	25.0	25.0	25.0	20.5
	Science,	5.0	15.0	10.0	15.0	15.0	20.0	20.0	20.0	20.0	16.6
	Literature-history,	5.0	20.0	15.0	15.0	15.0	15.0	15.0	20.0	20.0	15.0

FRENCH SCHOOLS. — Mention has been made of the lower primary schools of France and the *cours complémentaires*, constituting the first eight years of school for children beginning at seven years of age. The following table is prepared from the time schedule of a lower primary school, — six years. The times of the electives of the last two years are not given.

TABLE X. — *Showing the Number of Minutes a Week spent by a Pupil or Group of Pupils of a French Lower Primary School in Recitation in Each Grade and Subject, and the Percentage of Time given for Each Group of Studies.*

		1st Year.	2d Year.	3d Year.	4th Year.	5th Year.	6th Year.	Per Cent.
I.	Reading,	300	300	150	*-	*-	*-	34.6
	Writing,	150	150	375	375	375	375	
	Language and grammar,	75	75					
II.	Arithmetic and geometry,	150	150	300	300	300	300	19.2
III.	Object lessons and nature study,	75	75	150	150	150	150	19.2
	Geography,	75	75	150	150	150	150	
IV.	Literature,	-	-	-	150	150	150	26.9
	Morals, civics and history,	225	225	300	300	300	300	
I.	Per cent.,	50.0	50.0	41.1	26.3	26.3	26.3	-
II.	Per cent.,	14.2	14.2	23.5	21.0	21.0	21.0	-
III.	Per cent.,	14.2	14.2	23.5	21.0	21.0	21.0	-
IV.	Per cent.,	21.4	21.4	23.5	31.5	31.5	31.5	-

* Classed with literature-history.

The relatively large amount of time given to Group IV. is due to the fact that regular lessons in morals are required throughout the course. It will be noticed that contrary to the record given in tables VII. and VIII. mathematics is kept on a par with science throughout the course.

GERMAN SCHOOLS. — The elementary schools of Germany, as has already been said,* are in general of two kinds. The time schedules of those which are independent of the high schools are not all alike, and yet are determined to some extent by general regulations of the government. The following table is prepared from the time schedule of one of the people's schools. The increased amount of time over that of our

* Page 19.

schools may be accounted for from the fact that the daily sessions are longer than those of our schools, and also from the fact that, unlike our schools, the greater part of the time of pupils is spent in recitation.

TABLE XI. — *Showing the Number of Minutes a Week spent by a Pupil or Group of Pupils of a German People's School in Recitation in Each Grade and Subject, and the Percentage of Time given for Each Group of Studies.*

	BRANCHES.	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.	Per Cent.
I.	Reading,	200	200	200	*-	*-	*-	*-	*-	36.0
	Language and grammar,	300	250	350	350	400	350	350	350	
II.	Arithmetic,	150	200	200	200	200	200	200	200	20.9
	Geometry,	-	-	-	-	-	50	100	100	
III.	Object lessons and nature study,	150	150	150	150	100	100	100	100	16.2
	Geography,	-	-	-	-	100	100	100	100	
IV.	Literature,	-	-	-	200	150	150	100	100	26.7
	Religious instruction,	100	100	150	200	200	200	200	100	
	History,	-	-	-	-	100	100	100	100	
	I. Per cent.,	55.5	50.0	52.3	31.8	32.0	28.0	28.0	30.4	-
	II. Per cent.,	16.6	22.2	19.0	18.1	16.0	20.0	24.0	26.0	-
	III. Per cent.,	16.6	16.6	14.2	18.0	16.0	16.0	16.0	17.3	-
	IV. Per cent.,	11.1	11.1	14.2	36.3	36.0	35.6	32.0	26.0	-

* Classed with literature-history.

It will be observed that while the times for mathematics and science here given keep quite close to the averages for those branches given in Table VII., the time for mathematics in all grades beyond the primary is greater and the time for science during the same period is less than the corresponding times in that table. The two programs give language nearly equal prominence throughout the course. The similarity would doubtless be more apparent if the same revision had been made in the German program that was made in the averages given in Table VI. The comparatively high percentage of time given to the fourth group in the middle and upper grades of this program is due to the fact that it includes that part of religious instruction which has to do with Bible and church history.

Looking over the whole field of observation so far as we have gone in this inquiry, let us see what help we have for the fixing of time limits in the various subjects of instruction.

Reference has been made in the earlier part of this report * to the differences in the age at which children are permitted to begin the elementary school course in various places and in the length of the course. The suggestions there made as to the advisability of having sub-primary classes for children under the age of six years are supported and reinforced by a study of primary school requirements. In many schools where children are permitted to enter at five, as much is attempted and frequently as much is done in reading, writing and number as is done in schools whose minimum age of admission is six years. That this gain is only an apparent one is obvious to all who are able to compare results at the end of the course. The plan that I would recommend is that in all places where children are permitted to enter school at five years of age, sub-primary classes be established, whose work shall consist largely of an extension or modification of the manual and observational work of the kindergarten, supplemented by some of the nature work and drawing now pursued in our best primary schools and by a little reading, writing and number work.

If sub-primary classes are formed for children under six years of age, the nine years' course for children who enter school at five will be reduced to an eight years' primary and grammar school course, thus agreeing in age of admission, grades and age of graduation with our present eight years' course for children who are admitted at six years of age. By this arrangement the second year time limits of all reported nine years' courses may be regarded, for purposes of comparison, as the limits for the first year, the third year's limits as those of the second, and so on.

It may be well first to look at the time programs to ascertain some general points of agreement or disagreement. All agree in giving the language group a larger share of time in the first three years than is given to any other group. All agree also in increasing the time for literature and history as the pupils advance. The programs differ in the relative time to

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* Page 6.

be given to mathematics, but more than three fourths of the programs give an equal or greater time to mathematics than is given to science. The report of the Committee of Ten, not included in the foregoing tables of time programs, assigns a much larger place to science than to mathematics, giving to geography alone as much time as is given to arithmetic. In addition to this, five periods a week are allotted for science and two periods a week for natural history.

Let us now inquire what modification of the time limits indicated in Table VII. should be made in the light of other time limits reported and the apparent demands of an extended or "enriched" course.

Sub-primary Grade. — If there is a kindergarten connected with the schools this grade of children may be called the connecting class. Assuming that 35 per cent. of the school time is spent in physical exercises, games, manual training, etc., we may give 45 per cent. of the remaining time to exercises which belong to the language group, 10 per cent. to number, 30 per cent. to observation or nature lessons and 15 per cent. to story telling and memorizing of gems. These are nearly the proportions of time given in some good "connecting classes."

Grade 1. — The average for language given seems to have the support of the other courses and may be placed at 55 per cent. The averages give about equal time to science and history and a little more to mathematics than to either, but in every other course reported science has an equal or greater amount of time given to it than to mathematics. A fair apportionment in view of the kind of work needed to be done would give the same amount of time, or 15 per cent., to each of the three groups. The allotment as thus made would stand: language 55, number 15, nature study 15, literature and history 15.

The average given for language, 49.1, is a slight falling off from the amount assigned for Grade 1, but as an allowance was made in the actual average in reading, for history and literature, the revised average is not far from the estimates given in other courses. If we place for the other three groups, mathematics 15, science 15 and literature-history 20, we shall have very nearly an average of the corresponding times in all six tables.

Grade 3. — The average time given to language for this grade in Table VII. is considerably less than the time allotted in the other programs. But as the figures given in the report of the Committee of Fifteen and in the French and German programs are intended to include the time given to reading the difference is not great. The average for language and history, given in Table VII., is therefore kept as a fair proportion of time for the proposed program. An average of the allotted times for mathematics and science in the six tables gives a result of about 20 for each group, which is very nearly the time allotted in Table VII. The percentages for this grade will be language 35, mathematics 20, science 20 and history 25.

Grades 4, 5, 6. — The times given to the mathematics and history groups in these grades seem to be about the same as the corresponding times in Grade 3. They are therefore recommended for the proposed program. The only change proposed is to take 5 from the language group and give it to the science, making the times allotted to science and history the same.

Grade 7. — The only change proposed for this grade from the percentages given in Grade 6 is to take 5 from the science group and to add 5 to the literature-history group. This change would seem to be warranted by the figures given in most of the tables.

Grade 8. — The time allotted to mathematics for this grade in Table VII. is about 5 per cent. more than that given for Grade 7. If this extra time is made up from the time allotted in Grade 6 to science, the result will be not far from an average of the times given in all the tables. The percentages for language and history will remain as given for Grade 7.

The following table shows the percentages of time recommended as the basis for a proposed time program, together with the percentages given in previous tables: —

TABLE XI. — *Showing the Percentage of Time recommended as a Basis for a Proposed Time Program, together with Percentages given in Previous Tables.*

PUPIL'S AGE AND GRADE.	Group of Studies.	Table VII.	California Report.		Committee of Fifteen.	French Schools.	German Schools.	Proposed Course.
			Santa Cruz County.	Sacramento County.				
Age 5 to 6, called Grade 1 in Nine Year's Course,	I.	65.7	50.0	85.0	-	-	-	Sub-primary. 45.0
	II.	14.4	16.6	5.0	-	-	-	10.0
	III.	12.4	16.6	5.0	-	-	-	30.0
	IV.	7.4	16.6	5.0	-	-	-	15.0
Age 6 to 7, Grade 1 or Grade 2,	I.	56.0	50.0	50.0	60.9	50.0	55.5	55.0
	II.	18.5	16.6	15.0	9.7	14.2	16.6	15.0
	III.	12.1	16.6	15.0	19.5	14.2	16.6	15.0
	IV.	13.1	16.6	20.0	9.7	21.4	11.1	15.0
Age 7 to 8, Grade 2 or Grade 3,	I.	49.1	50.0	50.0	60.9	50.0	50.0	50.0
	II.	17.1	16.6	25.0	9.7	14.2	22.2	15.0
	III.	12.8	16.6	10.0	19.5	14.2	16.6	15.0
	IV.	20.8	16.6	15.0	9.7	21.4	11.1	20.0
Age 8 to 9, Grade 3 or Grade 4,	I.	34.7	33.3	50.0	50.0	41.1	52.3	35.0
	II.	17.6	25.0	20.0	16.6	23.5	19.0	20.0
	III.	21 6	25.0	15.0	23.3	23.5	14.2	20.0
	IV.	25.8	16.6	15.0	10.0	23.5	14.2	25.0
Age 9 to 10, Grade 4 or Grade 5,	I.	31.5	33.3	50.0	40.0	26.3	31.8	30.0
	II.	17.4	25.0	20 0	14.2	21.0	18.1	20.0
	III.	24.5	25.0	15.0	22.8	21.0	13.6	25.0
	IV	26.2	16.6	15.0	22.8	31.5	36.3	25.0
Age 10 to 11, Grade 5 or Grade 6,	I.	32.0	33.3	40.0	37.7	26.3	32.0	30.0
	II.	18.1	25.0	25.0	15.7	21.0	16.0	20.0
	III.	23.6	25.0	20.0	23.2	21.0	16.0	25.0
	IV.	25.8	16.6	15.0	23.2	31.5	36.0	25.0
Age 11 to 12, Grade 6 or Grade 7,	I.	34.3	25.0	40.0	37.7	26.3	28.0	30.0
	II.	18.5	25.0	25.0	15.7	21.0	20.0	20.0
	III.	22.7	25.0	20.0	23.2	21.0	16.0	25 0
	IV.	24.2	25.0	15.0	23.2	31.5	35.6	25.0
Age 12 to 13, Grade 7 or Grade 8,	I.	32.5	25.0	35.0	18.5	-	28.0	30.0
	II.	20.0	25.0	25.0	18.5	-	24.0	20 0
	III.	19.4	25.0	20.0	18.5	-	16.0	20.0
	IV.	27.7	25.0	20.0	44.4	-	32.0	30.0
Age 13 to 14, Grade 8 or Grade 9,	I.	27.1	25.0	35.0	18.5	-	30.4	30.0
	II.	25.9	25.0	25.0	18.5	-	26.0	25.0
	III.	18.2	25.0	20.0	18.5	-	17.3	15.0
	IV.	28.6	25.0	20.0	44.4	-	26.0	30.0

In making a time program some exercises not named in the above-mentioned groups must be provided for. These exercises are singing, drawing and manual training. The percent-

age of the entire recitation time allotted for this miscellaneous group of subjects in the ten courses under consideration is shown in the following: —

TABLE XII. — *Showing the Percentage of the Entire Recitation Time allotted for Singing, Drawing and Manual Training in Ten Courses.*

COURSES.	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.
A,	27.2	23.4	17.2	13.9	14.2	14.0	14.9	14.3
B,	15.1	13.6	16.8	16.3	15.5	15.5	16.5	12.1
C,	16.4	15.6	15.6	16.1	13.4	13.3	13.8	16.0
D,	28.5	23.5	23.2	16.3	16.3	16.2	12.5	13.1
E,	30.7	25.1	26.0	16.9	24.6	21.3	22.9	20.0
F,	28.0	34.3	27.5	25.7	24.0	25.4	22.6	22.6
G,	20.3	16.6	17.6	14.2	14.2	13.3	15.3	18.1
H,	22.3	24.2	21.6	21.7	22.4	24.5	26.1	26.7
I,	26.1	23.5	11.8	11.8	15.5	21.0	25.6	21.6
J,	17.8	22.2	23.0	22.3	20.8	22.3	15.0	20.6
Average,	23.2	22.2	20.0	17.5	18.0	18.6	18.5	18.5

The percentage of recitation time allotted for these subjects in the French and German programs referred to above, and in the course recommended by the Committee of Fifteen, is shown in the following: —

TABLE XIII. — *Showing the Percentage of the Entire Recitation Time allotted for Singing, Drawing and Manual Training in French and German Courses of Study and in the Course recommended by the Committee of Fifteen.*

COURSES.	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.
France,	22.2	22.2	20.8	20.8	20.8	20.8	-	-
Germany,	10.0	10.0	19.0	16.4	13.8	13.8	13.8	14.8
Committee of Fifteen,	16.3	16.3	16.6	14.6	13.1	13.1	22.8	22.8

It will be seen from the above table that the time allotments for the French course most nearly resemble the averages of the ten courses given in Table XII. The comparatively low percentage of time allowance for these subjects in the German course and in the course recommended by the Committee of

Fifteen is due to the fact that no time is allowed for manual training in those courses except one hour a week in the last two years of the latter course. It is apparent that the higher percentages must be maintained if manual training is pursued in all grades of the course. Even the averages given in Table XII. do not show the full proportion of time that must be given in a course which includes all three subjects of the miscellaneous group, and which gives from 60 to 90 minutes a week to each subject. With this fact in mind, and the fact that a comparatively greater amount of time will be needed for these subjects in the lower grades, the approximate percentages of time to be allowed for subjects of the miscellaneous group in the proposed course may be as follows: —

First grade, 24; second grade, 24; third grade, 22; fourth grade, 20; fifth grade, 20; sixth grade, 20; seventh grade, 20; eighth grade, 20.

The above percentages are of the entire recitation time of a pupil or group of pupils. The approximate percentages of a proposed course given in Table XI. are based upon the time given to four groups alone. A readjustment of these percentages so as to be based upon the entire recitation time is shown in the following: —

TABLE XIV. — *Showing the Approximate Percentage, in a Proposed Course of Studies, of the Entire Recitation Time of a Pupil or Group of Pupils spent in I. Language (including Reading, Writing, Spelling, Composition, English Grammar and a Foreign Language), II. Mathematics (including Arithmetic, Algebra, Geometry and Book-keeping), III. Elementary Science (including Nature Study, Physiology, Hygiene and Geography), IV. History (including English Literature, Civil Government, Biography and History Proper), V. Miscellaneous Exercises (including Singing, Drawing and Manual Training).*

GROUPS OF STUDIES.	Sub-primary.	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.
I. Language, . .	29.0	40.0	37.0	28.0	24.0	24.0	24.0	24.0	24.0
II. Mathematics, .	6.0	12.0	12.0	16.0	16.0	16.0	16.0	16.0	20.0
III. Science, . .	20.0	12.0	12.0	15.0	20.0	20.0	20.0	16.0	12.0
IV. History, . .	10.0	12.0	15.0	20.0	20.0	20.0	20.0	24.0	24.0
V. Miscellaneous, .	35.0*	24.0	24.0	22.0	20.0	20.0	20.0	20.0	20.0

* Including physical exercises, games, manual training, form study, etc.

The above percentages may be said to represent fairly the present relative value in education of the given groups of subjects as expressed in the most carefully planned courses of study in this country. Besides serving as a basis for further investigations, it is hoped that they will serve a two-fold purpose, first, in testing time programs in present use, and, secondly, in assisting superintendents and teachers to make new programs. To show a possible use of Table XIV. in the latter direction the following time program is given, in which the number of minutes a week of recitation time is found after subtracting from the entire school time the time given to opening exercises, to study or busy work and to recesses and physical exercises, the school day being 5½ hours long and there being 5 days in the week.

Time Program, showing the Number of Minutes a Week spent in Recitation by a Pupil or Group of Pupils in Five Groups of Subjects; also the Number of Minutes a Week given to Opening Exercises and Recesses and to Study in School.

GROUPS OF STUDIES.	Sub-primary.*	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.
I. Language, ...	325	360	333	273	234	240	240	276	276
II. Mathematics, . . .	75	108	108	146	156	160	160	184	230
III. Elementary science, . .	225	108	108	146	195	200	200	184	138
IV. History and literature, .	125	108	135	195	195	200	200	276	276
V. Miscellaneous, . . .	450†	216	216	215	195	200	200	230	230
Opening exercises, physical exercises and recesses, . . .	-	250	250	225	225	200	200	200	200
Study in school, ...	-	500	500	450	450	450	450	300	300
Total school time, . . .	1,200	1,650	1,650	1,650	1,650	1,650	1,650	1,650	1,650

* Figures in this column indicate the number of minutes spent in recitation and busy work taken together.

† Including physical exercises, games, kindergarten occupations, etc.

The recitation time indicated in the above program is intended to include the time more or less of which is spent under the direction of the teacher, or which is spent in quiet work by the pupil, as in some language work, nature study, drawing and writing. The study time includes only the time that is spent by the pupil without direction or aid from the teacher.

Of course the time allowed for busy work or study will

depend upon the number of sections or groups in which the recitations are heard. The above time program is made on the supposition that the class or school is divided into three sections in the first and second grades and into two sections in all other grades, and that in some of the exercises the three or two sections recite together.

Conclusions.

I have endeavored in this report to call attention to existing courses of studies and practices in the best schools in the hope of contributing, in a measure, to a solution of the questions relating to (*a*) the age and admission of pupils and length of the elementary course, (*b*) subjects of instruction to be pursued in the elementary schools, and (*c*) the relative amount of time which should be given to five groups of subjects. The conclusions, so far as they can be made from the data given, are as follows: —

1. An eight-years' course should be provided for all pupils whose age of entrance in school is six years, and for pupils who enter at five years of age there should be formed a sub-primary class, whose course is preparatory to the regular elementary course or is a means of connection between the elementary school and kindergarten wherever the kindergarten is made a part of the public school system.

2. An extension of the elementary school curriculum so as to include the elements of science, algebra, geometry, one foreign language and manual training is both wise and practicable; but these subjects should be concrete and practical, and be closely correlated with allied subjects that are ordinarily pursued in the elementary schools. The reading of standard authors should be begun in the third grade and be continued throughout the course to the extent of several books every year.

3. In the sub-primary class, or connecting class between the kindergarten and the first grade primary, a larger share of time should be given to observation lessons, games, weaving, paper cutting, etc., than is given in subsequent grades, while a comparatively short time should be given to reading, writing and number, the proportional allotments for this grade being approximately as follows: for physical exercises, games, manual training, etc., a little more than one third; for lan-

guage, including reading, writing and composition, a little less than one third; for number, one sixteenth; for observation lessons, one fifth, and for story telling and memorizing of gems, one tenth.

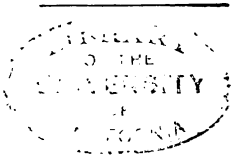
The formal language studies should occupy a larger proportion of time in the earlier grades of the regular elementary course than in the later grades; while mathematics should have a less prominent place in the lower grades than in the upper, the approximate proportion of time for formal language exercises being from two fifths to one fourth and for mathematics from one eighth to one fifth. The time allotted to elementary science or nature study should be at the beginning of the course about one eighth of the time, increasing in amount until in the middle grades it is one fifth of the time, and falling off in the last two grades to one sixth and one eighth of the time. History, including literature, biography, civil government and history proper, should occupy about as much time as science in the first six grades. In the two upper grades about one fourth of the time should be given to the history group. To singing, drawing and manual training there should be but little difference in the proportion of time given in the various grades of the course, the approximate proportion of time being from one fourth to one fifth.

The above conclusions relate to the first two features of a course of studies named in the beginning of this report. A consideration of other features, involving the order in which subjects and parts of subjects shall be presented and the distribution of subjects in respect to both correlation and departmental instruction, must be left for a subsequent report.

SECOND REPORT

UPON A

COURSE OF STUDIES FOR ELEMENTARY SCHOOLS.



BY

JOHN T. PRINCE,

AGENT OF THE MASSACHUSETTS STATE BOARD OF EDUCATION.

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REPORT.

In a previous preliminary report upon A Course of Studies for Elementary Schools * I discussed some features of the best courses in this and other countries for the purpose of reaching a standard of practice respecting the studies to be pursued and a proper allotment of time to be given them. The conclusions reached in that report were as follows: —

1. An eight years' course should be provided for all pupils whose age of entrance in school is six years, and for pupils who enter at five years of age there should be formed a sub-primary class, whose course is preparatory to the regular elementary course or is a means of connection between the elementary school and kindergarten whenever the kindergarten is made a part of the public school system.

2. An extension of the elementary school curriculum so as to include the elements of science, algebra, geometry, one foreign language and manual training is both wise and practicable; but these subjects should be concrete and practical, and be closely correlated with allied subjects that are ordinarily pursued in the elementary schools. The reading of standard authors should be begun in the third grade and be continued throughout the course to the extent of several books every year.

3. In the sub-primary class, or connecting class between the kindergarten and the first grade primary, a larger share of time should be given to observation lessons, games, weaving, paper cutting, etc., than is given in subsequent grades, while a comparatively short time should be given to reading, writing and number, the proportional allotments for this grade being approximately as follows: for physical exercises, games, manual training, etc., a little more than one third; for language, including reading, writing and composition, a little less than one third; for number, one sixteenth; for observation lessons, one fifth, and for story telling and memorizing of gems, one tenth.

* Sixtieth report of the Massachusetts Board of Education, pp. 437-480.

The formal language studies should occupy a larger proportion of time in the earlier grades of the regular elementary course than in the later grades; while mathematics should have a less prominent place in the lower grades than in the upper, the approximate proportion of time for formal language exercises being from two fifths to one fourth and for mathematics from one eighth to one fifth. The time allotted to elementary science or nature study should be at the beginning of the course about one eighth of the time, increasing in amount until in the middle grades it is one fifth of the time, and falling off in the last two grades to one sixth and one eighth of the time. History, including literature, biography, civil government and history proper, should occupy about as much time as science in the first six grades. In the two upper grades about one fourth of the time should be given to the history-literature group. In singing, drawing and manual training there should be but little difference in the proportion of time given in the various grades of the course, the approximate proportion of time being from one fourth to one fifth.

The last table of the report (Table XIV.) gives the percentages of time for each group of subjects. It is as follows: —

TABLE XIV. — *Showing the Approximate Percentage, in a Proposed Course of Studies, of the Entire Recitation Time of a Pupil or Group of Pupils spent in I. Language (including Reading, Writing, Spelling, Composition, English Grammar and a Foreign Language), II. Mathematics (including Arithmetic, Algebra, Geometry and Bookkeeping), III. Elementary Science (including Nature Study, Physiology, Hygiene and Geography), IV. History (including English Literature, Civil Government, Biography and History Proper), V. Miscellaneous Exercises (including Singing, Drawing and Manual Training).*

GROUPS OF STUDIES.	Sub-primary.	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.
I. Language, . .	29.0	40.0	37.0	28.0	24.0	24.0	24.0	24.0	24.0
II. Mathematics, .	6.0	12.0	12.0	15.0	16.0	16.0	16.0	16.0	20.0
III. Science, . .	20.0	12.0	12.0	15.0	20.0	20.0	20.0	16.0	12.0
IV. History, . .	10.0	12.0	15.0	20.0	20.0	20.0	20.0	24.0	24.0
V. Miscellaneous, .	35.0*	24.0	24.0	22.0	20.0	20.0	20.0	20.0	20.0

* Including physical exercises, games, manual training, form study, etc.

In a circular letter sent to upwards of two hundred leading teachers and superintendents, I asked, among other questions, what change, if any, they would propose for the grouping given in the above table. Few pronounced opinions were expressed in respect to time allotments. Some would give less time to science and history and others would give more; a few express a doubt as to the wisdom of reducing the time for mathematics so much, while others would go even further in the reduction. These and other opposing views lead me to believe that the percentages stated in the table are approximately near what should be given to the various groups of subjects in a model course.

As to the grouping of subjects, some differences of opinion appear. It should be said that the above division of subjects was made so that comparisons of present courses could be made with courses proposed in the report of the Committee of Ten and in the California reports. Other divisions might very properly be made, and for purposes of correlation would perhaps be preferred. Dr. Soldan, superintendent of the public schools of St. Louis, says that "English literature should be classed with 'language,' not with 'history.' The historical part of it is not prominent enough to classify it under history." This arrangement would agree substantially with that contained in the report of the Committee of Fifteen, which classifies the subjects as follows: —

I. Language, including reading, penmanship, spelling, literature and grammar.

II. Mathematics, including arithmetic, algebra and geometry.

III. Geography, including the elements of science as well as geography proper.

IV. History, including biography and civil government.

V. Miscellaneous, including drawing, singing, manual training and physical culture.

A rearrangement of Table XIV. so as to include literature in the language group would change the percentages in the first and fourth groups, as shown in the following: —

TABLE XV. — *Showing the Approximate Percentage, in a Proposed Course of Studies, of the Entire Recitation Time of a Pupil or Group of Pupils spent in I. Language (including Reading, Writing, Spelling, Composition, English Grammar and Literature and a Foreign Language), II. Mathematics (including Arithmetic, Algebra, Geometry and Bookkeeping), III. Elementary Science (including Nature Study, Physiology, Hygiene and Geography), IV. History (including Civil Government, Biography and History Proper), V. Miscellaneous Exercises (including Singing, Drawing and Manual Training).*

GROUPS OF STUDIES.	Sub-primary.	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.
I. Language, . .	29.0	42.0	42.0	38.0	32.0	32.0	32.0	33.0	33.0
II. Mathematics, .	6.0	12.0	12.0	15.0	16.0	16.0	16.0	16.0	20.0
III. Science, . .	20.0	12.0	12.0	15.0	20.0	20.0	20.0	16.0	12.0
IV. History, . .	10.0	10.0	10.0	10.0	12.0	12.0	12.9	15.0	15.0
V. Miscellaneous, .	35.0*	24.0	24.0	22.0	20.0	20.0	20.0	20.0	20.0

* Including physical exercises, games, manual training, form study, etc.

The groupings made in the above tables suggest a matter of vital importance in respect to a course of studies. I refer to the —

CORRELATION OF STUDIES.

As is well known, this subject has attracted much attention of late among educators. To ascertain how far it has been carried into practice, I made inquiry in my letter to superintendents of schools as to whether subjects are grouped with special reference to correlation, and to what extent, if at all, the teachers are following a systematic plan of a correlation of studies. The answers to these inquiries show that in a large percentage of schools the teachers are in the effort at least to follow a well-defined plan of correlation. In most cases the plan is that of a natural or logical correlation of two or three subjects, as geography with history, nature study with geography and language with all other studies. In some replies this idea is enlarged somewhat, as in the following: —

Jersey City, N. J. — "In primary department nature study with (1) language and composition, (2) with reading, (3) with drawing; reading with language and composition. In grammar department,

geography with history, nature study with reading, language and composition, drawing with all, particularly with history."

Brookline, Mass. — "Geography, history and literature are correlated in every grade. Recently we have been trying to correlate the music, using songs appropriate to the season and to the various subjects of nature study as they are taken up; also songs of different countries. Reading, drawing and language are correlated with all other subjects."

Springfield, Mass. — "Language studies are taught chiefly in connection with thought studies. Physics and geography on the one hand and geography and history on the other are closely connected. The drawing is closely connected with geography, history, literature and nature study."

Pawtucket, R. I. — "Geography is considered a large subject, embracing these two content or thought centres: (1) nature study, (2), history and literature. Topics selected from these centres are presented with a view to subsequent language work. The teacher keeps this thought continually in mind: 'Am I presenting the subject in a way to secure on the part of pupils a successful giving back in words?' The reading matter is selected with a view to supplementing the instruction given by the teacher in lower grades and text-book in the higher."

Gardner, Mass. — "A single exercise includes nature study, language and drawing. The reading is often selected with reference to work done in other studies. Studies of animals, plants, etc., are made to correspond with geography and history."

Pittsfield, Mass. — "In the first three years the information and culture work coincides with geography, and the oral language and written work are expected to depend mainly upon this for subject matter. We are trying to base reading, spelling, writing and language drill upon the same vocabulary. We aim in our course of study and instruction to secure breadth, accuracy, facility and inspiration. The results seem to indicate that we are moving in the right direction."

In quite a number of places the idea of correlation within each of three or more groups is embodied, as shown in the following: —

Winona, Minn., Normal Practice School. — (1) History, geography, drawing, natural science; (2) reading, language and literature; (3) mathematics; (4) vocal music and physical exercises. "These groups interlace somewhat at some points. In primary grades the most successful correlations are with language, read-

ing, natural science (nature study). The correlation of numbers with these subjects has not proved successful, and has been largely discontinued. In grammar grades the correlation of geography with natural history and natural philosophy is very successful. Grammar, reading and study of authors are well correlated."

Clinton, Mass. — "The groupings are: (1) history and civil government; (2) algebra, arithmetic and geography; (3) literature and language; (4) nature study, geography and drawing. Language, writing, drawing and spelling are correlated with nature study, geography and history. By this arrangement there is much saving of time and effort and a more complete understanding of the subject."

St. Paul, Minn. — "Groupings are: (1) nature study; (2) geography; (3) history and literature. Reading and language work based upon these three so far as possible, also drawing, painting, making and modelling. Results encouraging. Interest in school work greatly increased."

Dedham, Mass. — "Groupings are: (1) history, civil government and literature; (2) elementary science and geography; (3) arithmetic, geometry and mechanical drawing. Language, spelling, reading and writing are correlated with each of the above groups."

Bridgewater, Mass., Normal Practice School. — "The studies are taken in five groups, viz.: (1) nature study; (2) mathematics; (3) history; (4) geography; (5) language, including reading, spelling, penmanship, grammar, literature, composition, drawing, manual training, music. The aim in all grades is definite knowledge of the objects of thought and accurate expression in good English, oral and written, centering the thought upon the child's activities rather than upon the subject matter. The objects of thought are things and their relations; with the older pupils, causes according to their ability. The results are that the children are observant, thoughtful, able to express what they know. The constant endeavor is to make all the work contribute to the unfolding and perfecting of the child's life."

Cleveland, O. — The groupings made are as follows: —

A.	Nature study, . . .	Plant study, Animal study, Human body, The earth, or geography.
B.	History or the humanities,	United States history, Civics, Conduct and morals, Industries.
C	Literature, . . .	Study of authors and their works, Literature accompanying other branches, Reading.

D. Language, . . . { Objective study of language or construction work, Spelling, Compositions, oral and written.

"The important relations are everywhere observed. Geography, nature study and industries; history and geography; civics, morals and history; physiology, morals, physical culture and physics; literature and reading with all. The method is the natural method of association, consciously carried out by the teacher under direction of supervisors."

In some instances the correlation followed evidently includes the idea of concentration, with one or two central studies, as shown in the following plans: —

Minneapolis, Minn. — "In primary grades, reading, spelling, writing, singing (to a degree), language (oral and written), drawing and industrial work are correlated, as expressing and supplementing the central thought of the morning talk. The subjects of the morning lessons are nature study in spring and fall and literature in the winter. In grammar grades there is no center of correlation. Language and composition are related to geography, history or general lesson."

Cook County Normal School, Chicago. — "The central subjects are science, geography and history. Writing, oral reading and all the art work are concentrated upon the central subjects. Nearly ten years ago the faculty began the work of correlation of all subjects. The entire movement of the school is based upon this fundamental principle. All modes of expression spring directly from investigation and study of geography, history and nature study. Arithmetic is carefully correlated with all subjects."

Framingham, Mass., Normal Practice School. — "In the first grade, all subjects are taken in one group, based on *literature*, — "the story of Hiawatha." In the second and third grades, studies are grouped as much as possible around *science work*. Some reading which is real literature and number work are grouped with form as well as science. In the grammar grades, reading is correlated with history, geography, language and science; language with reading, geography, science, history and drawing; geography with history."

California, Pa., Normal Practice School. — "Science and literature are central studies. With them are associated reading, spelling, writing, language, geography, and to some extent arithmetic and drawing. The aim in general is to teach the form studies through the content studies."

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Some replies give in detail the method pursued. The following are among the best of the outlines of lessons presented: —

Worcester, Mass. — Illustrative work in correlation of history, literature, language (oral and written) and drawing (maps, pictures): —

Settlement of Plymouth.

I. *History.* — Each child has geography open at map of Massachusetts.

(*a*) Description of town from recent visit.

(*b*) Historical points of interest, as "The Rock," "Pilgrim Hall," "Cemetery," etc.

(*c*) Historical facts connected with points of interest. Illustrative pictures shown.

(*d*) Why people came; England; Holland; "Mayflower"; voyage; landing. Geography open at map of world.

(*e*) Experiences of first winter; food; climate; Indians, etc.; customs of people.

II. *Literature.* — "Courtship of Myles Standish," "The Landing of the Pilgrims" and "The Pilgrim Fathers" read and talked about.

III. *Language.* — Oral and written reproduction for clear, concise statements; paragraphing; capitalizing; punctuation, etc.

IV. *Drawings*, to illustrate written work, are made from pictures connected with subject matter; where possible, drawings are made from objects; also map of Massachusetts, locating Plymouth.

North Attleborough, Mass. — Illustrative work of one day in second grade, October 20: subject of morning talk, "Winds." The good the winds do; the harm. Direction of wind (this helped to review points of compass). Children infer which is the cold winds, the warm wind, the rain wind, and the wind which brings pleasant weather. Memory gems in connection with winds learned and little songs sung, — "Clouds of gray," "Come, little leaves," and "Which way does the wind blow?"

In spelling, such words as would be used in written work given.

In language, the words "hear" and "sea" and forms of "blow" brought in connection with the subject. Filling of blanks in sentences like "Oh ——— the wind!" "The wind has ——— the leaves from the tree." Sentences written in answer to questions placed upon the blackboard, such as, "Which is the cold wind?" "Which wind brings rain?"

Stories read and told: "Odysseus and his bag of winds;" "How the West Wind helped Dandelion;" "Four Winds," from "Hiawatha."

Normal, Ill. — Sixth grade. "*History:* Causes of the French and Indian War; desire of France and England to secure the fur trade;

differences in religion, etc. "*Geography:* Valley of St. Lawrence; the Great Lakes; Ohio River; Nova Scotia and New Brunswick; Lake Champlain and Lake George; pineries of west and north; fisheries on coast. *Science:* Fur-bearing animals, — beaver, otter, mink, bear, buffalo, raccoon; also deer and moose. *Arithmetic:* Relative size of the lakes, expressed decimally; of the States in the once disputed territory; relative worth of various kinds of furs, etc."

Some of the above extracts suggest possible dangers of over-correlation, — the dangers of restraining limitations on the one hand and of the forcing of unnatural relations on the other. But some of them also suggest lines of correlation which every course of study should indicate. If the desired correlation of studies signifies nothing more than a means of remembering certain facts of a subject, it may be limited to incidental references which any good teacher makes in her teaching, and no mention need be made of such references in the course of studies more than to state the fact that in every study the teacher should bring together in the recitation certain related ideas for the purpose of fixing those ideas more firmly in the pupils' minds. It is asserted by some that a correlation of studies means only a sequence of studies such as would be made with the ends of education clearly in view. According to others, these views of correlation are insufficient as a guide to education. The mind, they say, naturally unifies the knowledge it receives, and it is the function of the course of studies, as it is of the teacher, to assist nature in this work. With the idea of incidental association of ideas only in mind, or that of a proper sequence of topics in the study of a subject, the teacher finds it difficult to "assist nature" in following some of our present courses of studies. With these courses only as guides, she might lead her pupils to learn the commercial cities of Europe, the history of Mexico, the names of the planets and the distinguishing characteristics of an orchid, to conjugate the verb "to be," to write a composition upon perseverance, to read about the exploits of John Smith, to perform problems in partial payments and to spell the names of the diseases, — all to be studied and recited on the same day. This many teachers will say is not an exaggerated record of what they are expected to do in a single day. In other words, the course of studies in many cases is simply an aggregation of subjects put to-

gether with no reference to their natural relations. Moreover the burden is becoming more heavy and the trial more perplexing as year by year new studies are added to the curriculum. A true correlation of studies will help to solve the difficulty by furnishing to the teacher helps both in the unification and in the co-ordination of studies. To accomplish these ends it will be necessary to select the parts of all subjects for a given term or month that have a close relation to one another, and to arrange them in groups that are in some degree co-ordinate; i. e. equally essential as a means of gaining the chief ends of education. There are parts of literature, history, science, mathematics and the language arts that are clearly connected, logically and psychologically. These subjects should be arranged in a course of studies so that they may be carried on together. It will not be necessary to confine the work of the school to these related subjects, but they constitute both in kind and in amount the essential work to be done in a given time. That the education may be harmonious or many-sided, at least one subject of each of the great co-ordinate group of studies must be pursued during the entire school period.

In the matter of grouping with the above ends in view, there is some difference of opinion. Some of the groups given on previous pages of this report are the results of wise experience, and may serve as guides to correlation. Other groupings are found in the returns, among the most suggestive of which is the one made by President Snyder of the Colorado State Normal School. It is as follows:—

I.	Science or Nature Group,	Physics, chemistry, zoölogy, botany, geography, etc.
II.	Social or Man Group,	Geography, government, economics, history and literature.
III.	Spiritual or Ethical Group,	History, literature, ethics, religion.
IV.	Psychomanual or Expression Group,	(1) Qualitative: speech, drawing, art, construction. (2) Quantitative: construction, mathematics.

In my annual report of two years ago I presented a grouping of subjects which was intended to suggest lines of separation for departmental instruction. That grouping, with some modifications and additions, might also serve as a basis for

correlation. It bears a close resemblance to groupings elsewhere made in this report, especially to that which is given in Table XV.* With that table as a guide, a plan of studies may be arranged having the following features: —

1. The selection of topics should be so made as to be of general use. This general course to serve as a basis for more detailed courses in given localities.

2. The selection of topics should be made from all groups, so that at least one subject of every group will be presented for a given time.

3. The selection of topics from each group for a given time should be made with reference to their logical relations to the topics of all other groups, so far as the nature of the subjects and a proper treatment of each will permit.

4. No reference to a centre or to centres of correlation need be made in the general course, it being understood that each subject taught will be the centre, with which all other subjects at the time will be correlated.

5. No reference to the place or time of isolation in teaching need be indicated, since that and all other matters relating to methods of treatment will be left to the teacher.

Departmental Instruction.

Departmental instruction has attracted especial attention during the past few years, having been tried under different circumstances in various places. The following facts are gleaned from the returns received last year and from some courses of study not covered by the returns. They relate only to the departmental instruction which is carried on by regular teachers in the primary and grammar schools. The work of special teachers of music, drawing, manual training and elementary science is not here noted.

Braintree, Mass. — Thirteen teachers, in a total of twenty-six, of grades five to nine, have been teaching departmentally during the past two years. Each teacher has charge of a room, and remains in it about half of the school time. The superintendent reports as follows upon the advantages and disadvantages of the plan: "I think

* Page 6.

it is too mechanical; does not recognize natural economical and common-sense correlations to any adequate extent. The cause of this is a lack of knowledge of correlations and a good working scheme of them. Slight friction in discipline at times is a disadvantage. A balanced emphasis in teaching is placed upon all subjects, — none are neglected. Some subjects which could not be taught at all without a special teacher are taught excellently. It is an advantage for a teacher to be with pupils more than one year."

Brooklyn, N. Y. — About one fifth of the teachers of the city follow the departmental plan in the sixth, seventh and one half of the eighth school years. Each departmental teacher has charge of a room, seeing to the opening exercises and the records of her room, and teaching in it from one fifth to one half of her time. Each teacher teaches her specialty or a correlated subject. The plan has been in operation four years, and the following results are reported: "The special teachers become better acquainted with peculiarities of individual scholars, become better acquainted with subject matter and method. Weak teachers may be assigned to relatively unimportant studies. On boys' side, strong disciplinarians are needed to make the system successful."

Concord, Mass. — Eight out of nineteen teachers teach outside of their rooms more than half the time. Of the plan, which has been in operation four years, the superintendent writes: "I have seen no disadvantages that seem to me of importance. The average teacher seems to teach any subject through a course of three or four years much better than three or four average teachers teach the same subject in fragments during the same period of time. This results in better mental training of the pupil and in better discipline. The plan demands wise administration and proper subordination of teachers to a principal."

Dedham, Mass. — Each of the teachers of grades seven, eight and nine follows the departmental plan, remaining in her room about two and three fourths hours daily. A "great gain in scholarship" is reported as a result of the plan, which has been in operation a few months.

Chelsea, Mass. — About one half of the teachers, all in the grammar grades, teach one or more subjects outside of their rooms. The plan followed is by an exchange of subjects, generally some subject for geography. The superintendent writes (November, 1896): "Our scheme in geography is so difficult that it becomes necessary to have special teachers. The only disadvantage is when a teacher is weak in discipline. A specialist in geography brings about splendid results with us, as we are using Mr. Murdock's plan entire."

Everett, Mass. — The superintendent says of the work done here: "We have no set plan in this direction. If we have good, strong teachers, subjects are exchanged to the best advantage in individual cases. With one poor or ordinary teacher, the classes suffer in discipline, etc. With all strong teachers it is a success *in the higher classes.*"

Gardner, Mass. — For two years a few teachers of the lower grades have taught outside of their rooms for one hour of the day. "With present teachers and conditions, the plan appears to be profitable."

Lawrence, Mass. — Twenty out of two hundred teachers teach one or more subjects in two or more rooms, of grades seven and eight. Each departmental teacher has charge of a room about one half of the time. The teachers specialize in one subject only. The advantages given, after one year's trial, are: "Better preparation on the part of teachers, more enthusiasm among pupils and more systematic instruction."

Lowell, Mass. — A few teachers teach departmentally in the seventh and eighth grades. Various plans are pursued. In one school one teacher has charge of the music in four rooms. A few teachers exchange subjects, *e. g.*, arithmetic for grammar, geography for history. The results noted after several years' experience are as follows: masters are advised to encourage exchanges between teachers in upper grammar grades. "It has been done in a few cases, but the success has not been sufficiently marked to cause any considerable increase in departmental teaching."

Lynn, Mass. — Eleven out of eighty-six teachers in the grammar grades teach subjects outside of their respective rooms. Thus in one school arithmetic and algebra are taught by one teacher, history and geography by another, language and grammar by a third, civics and history by a fourth, penmanship by a fifth, reading by a sixth and elementary science by a seventh. The plan has been in operation two years, and the advantages and disadvantages are reported as follows: "Advantages: the teacher is definite in purpose as to matter, method and interest; ample preparation; enabled to correlate subjects. Pupils broadened in scope; trained toward accurate observations and clear, connected thinking; fairly adequate expression. It leads pupils to further or renewed interest and extended definite reading. Disadvantages: in some instances lack of personality in teachers. Individual comparisons of teachers and false estimates of teachers by pupils."

Malden, Mass. — Departmental instruction is carried on by two thirds of the teachers in all grades above the third. All the departmental teachers have charge of a room except one, who does work

with special classes, doing two years' work in one. About half of the time on an average is given by a teacher to one subject outside of his or her room. The plan has been in partial operation one and one fourth years, and in full operation three months. So far the plan is liked, because each teacher can be given work suited to her taste and ability.

Marlborough, Mass. — One third of the teachers are employed departmentally in all grades above the fourth. Each teacher has charge of a room, but no more time is spent in that room than in any other room, as the work is wholly in departments. The plan has been in operation two years, with the following results: "Every advantage. Better work, better discipline, easier for teacher. General tone is better. Teachers all prefer it."

Medford, Mass. — About forty per cent. of the teachers in grades six, seven and eight teach departmentally, each having charge of a room in which she is teaching about three hours. Each teacher teaches in her room the subjects which she teaches in other rooms. The results after three years' trial are reported as follows: "The advantages are chiefly on the teachers' side. There is less nervous tension than when one carries so many subjects. The disadvantage is chiefly that teachers do not come into such close relations with pupils as under the other plan."

Middleborough, Mass. — The departmental plan has been followed to a small extent in the upper grades. The advantages observed by the superintendent are: "(1) It renders possible an enrichment of the course of study without increasing the burdens of teachers and pupils; (2) it improves the skill and scholarship of the teachers; (3) subjects are better taught; (4) time and energy are saved; (5) it gives a certain unity to the instruction in each subject; (6) it improves the scholarship of the pupils."

Milton, Mass. — About one eighth of the teachers, mainly in the upper grades, have followed the plan for three years, each teacher having charge of a room and remaining in it about half the time. The superintendent reports, as a result, "Better teaching; no disadvantages."

New Bedford, Mass. — Thirty-eight of the forty-four teachers in the grammar grades follow departmental teaching; each having charge of a room, in which she teaches from one third to one half of her time. There being several classes of each grade in the same building, the work of each grade is distributed among a few teachers. After two years of trial, the disadvantages are said to be trifling. The advantages are better teaching and better preparation.

Quincy, Mass. — The departmental plan is followed by about ten

per cent. of the teachers, mainly in the upper grades. Each departmental teacher has charge of a room and teaches in it about one third of the time. In one large school building the plan is followed by all the teachers. "In this school," says the superintendent, "the change in the teaching force has been so slight and the teachers have been so evenly balanced in discipline and in teaching power that the principal considers his results better than he could secure before the change. In our other schools I prefer to limit such departmental work to grades seven and eight, because of the incessant change of teachers."

Springfield, Mass. — About ten per cent. of the teachers teach departmentally, under the direction of principals. Each of such teachers has charge of a room, and teaches in it about two hours daily. They are generally teachers of grades six to nine. The results reported by the superintendent are as follows: "Teaching is more effectively done. There is little opportunity for routine 'lesson-hearing' where one teacher follows another before the same class. If teachers work together harmoniously, the co-ordination of various studies is easily made; if they don't work together, this suffers. Discipline is a trifle harder under the departmental plan. Poor teachers cannot survive under it."

Worcester, Mass. — Thirty-five or forty teachers are doing a little departmental work, mainly in the upper grades, each teacher having charge of a room, and teaching outside of it but a small portion of the day. The advantages observed by the superintendent are as follows: "The advantages most evident are: first, that a teacher can in a degree become a specialist, if she has but a limited number of subjects to teach; second, the quality of instruction is decidedly improved. If teachers undertake to do departmental work who are not good disciplinarians, confusion is likely to follow. The most successful instances of departmental work that I have seen are where two teachers work together. If the circle is larger, the difficulties multiply in geometrical ratio. In cases where there are two ninth grades in a single building, departmental work is almost universal, and applies to nearly all the subjects taught."

As would be expected, the expression of opinions in respect to the disadvantages of the departmental plan is not full or pronounced. The fact that the number of places reporting no departmental teaching far exceeds the number reporting such teaching is partial evidence of its not being favored. An expression of reasons for not following the plan was not called

for, and yet several expressions of that kind were given by some of our most thoughtful superintendents. The following quotations will show the character of these objections: —

"If knowledge were the end of education, the departmental plan might be used; but, as character is the one end and aim of our work, the departmental plan, therefore, has no place in our teaching."

"We are likely to have more departmental work in the grammar schools, but I question whether its advantages will offset the opportunity for that fine correlation of studies that obtains in the system of class instruction."

"Detrimental in the extreme; undermining the personal influence of the teacher, which is the greatest possible factor in the moral education of the child."

"Having tried, in a school of twelve teachers, the departmental system for two years, I dropped it, and am prepared to state why that system in elementary schools is not for the best interests of our children."

"A poor teacher on any subject has the opportunity to spoil more children in teaching half a dozen classes in that branch than in teaching only one class. It is difficult to fix responsibility on pupils for bad conduct when they are with several teachers."

"I think that the departmental plan tends to narrowness and irresponsibility on the part of teachers and laxity of discipline on the part of pupils, and, with laxity of discipline, poorer work. In cases where there is an assembly study room with recitation rooms, the departmental plan is more likely to produce good results. I am satisfied, from my observations, that departmental work in an ordinary building and for the ordinary studies rather weakens than strengthens the instruction as a whole."

From so many contrary opinions it is difficult to form conclusions in any degree satisfactory to all. I venture, however, in the light of this investigation and of direct observation in the schools, to recommend the adoption of the departmental plan of instruction in the elementary schools, subject to the following limitations: —

1. Departmental instruction should be confined to the middle and higher grades.

2. Each teacher should have charge of a room, and should teach the pupils of that room at least three fifths of the time during at least one year.

3. A teacher should teach outside of her room but one subject, or two closely correlated subjects.

4. There should be frequent consultations of teachers, for the purpose of laying out correlated work and of making a proper balance of work for the pupils.

Elective Studies.

It has been generally assumed that the subjects pursued in grades below the high school are subjects needed for all pupils, unmindful of their expected career, and that, therefore, such subjects should be made obligatory in these grades. But the introduction of new studies into the grammar school course has brought up anew the question of carrying the elective system below the high school, where the system has been followed successfully for several years in many cities and large towns. In my letters of inquiry last year, information was sought concerning elective studies. From the responses received there are only sixteen which reported that a choice of studies was permitted pupils in the elementary grades, either as extra, or as optional between two studies. The following table shows the extent to which electives are permitted in sixteen of the seventy-six places reporting: —

TABLE XVI. — *Showing the Places and Grades of Grammar Schools in which Electives are permitted, and Some of the Results observed by the Superintendent or Principal.*

CITY OR TOWN.	Subject.	Grade in which the Subject is elected.	Number of Years the Plan has been in Operation.	Remarks of the Superintendent or Principal.
Braintree,	Latin,[1] Algebra,[2]	7, 8 7, 8	2 2	Every pupil in the class has chosen the subjects. No definite results yet.
Brookline,	Latin, French,	9 7-9	– –	– – –
Cedar Falls, Iowa (Practice School).	Latin,[3]	8	2	Have found the introduction of Latin as an elective a benefit to the work of the school, and the progress made by the pupils sufficient to assure me that it is a desirable grade in which to begin the subject.
Cleveland, O.,	German,[3]	1-8	–	– – –
Clinton,	Algebra,[2] Geometry,[2]	7-9 7-9	2 2	Results are good. We like the plan.
Concord,	Latin,[1]	7, 8	4	Results are reasonably good.
Dedham,	Latin,[3]	9	3	– – –
Denver, Col.,	German,[3]	5-8	–	It should be as all other studies, entirely compulsory or not pursued at all.
Framingham (Practice School).	Latin,[3]	7-9	1	All pupils decided to take the subject.
Gardner,	Latin,[1]	9	–	– – –
Milton,	Latin,[1]	7-8	3	About sixty per cent. of pupils elect Latin. The choice is made between Latin, including English grammar, and English grammar alone.
Springfield,	Man'l Train'g,[3]	4-9	–	Manual training and sewing, grades 4-9; cooking, grades 7 and 8. Practically all the pupils elect these.
Trenton, N.J. (Practice School).	Latin,[1]	8	–	– – –
Watertown,	German,[1]	9	5	– – –
Winchester,	Latin,[3] French,[3]	8, 9 8, 8	2 2	The results have been favorable to interest and to progress.
Woburn,	Latin,[1]	8, 9	2	The plan is working satisfactorily.

[1] Taken in place of English grammar. [2] Taken in place of arithmetic. [3] Extra.

From the experience outlined above, it would seem that the main question of elementary school electives is at present in connection with a foreign language. Algebra and geometry may well be taken with arithmetic, and be required from all

pupils in the upper grades. There is also no question as to the desirability of making elementary science or nature study a required study in all grades. In respect to a foreign language, whatever we may think of it as desirable for all pupils in the higher grades of the grammar school, we cannot look upon it as one of the great co-ordinate subjects or group of subjects necessary to the highest interest of all. The prejudices of the people also must be considered in making up a list of required subjects. There are those who regard time spent upon anything but English branches as an absolute waste, especially for those who are to leave school at the end of the grammar school course. It would seem best, therefore, to make the study of a foreign language optional, either by making it an extra study or by permitting it to be taken in place of some part of the work in English grammar.

Thus far I have treated those features of a course of studies only which deal with the subjects of study, their arrangement and proper adjustment to teaching conditions. There is a phase of the subject which properly belongs to the organization of the school, but which vitally affects the course in its adaptation to the needs of the pupils. I refer to —

The Grading and Promotion of Pupils.

There is no question of school organization at present more important than that of a proper adjustment of conditions to the needs of individual pupils. The assumption upon which most courses of study seem to be based, that just so much ground must be gone over with equal throughness by all pupils in the same time, is the greatest bane of our public school system. The courses in use are probably intended to meet the needs and capacity of pupils of average ability. Such, however, is the difference of ability between the brightest third and the dullest third of almost every class of pupils, that the work thus required is enfeebling to one part while it is discouraging or unduly excessive to the other. To neither group is there the stimulus of success with effort. To one group there is success without effort; to the other there is effort without success. The difficulty, it is feared, is enhanced by the want of ability or inclination on the part of many teachers to adapt each lesson's

requirements to the capacity of individual members of the class.

There are some signs of reaction against a system which encourages or permits a dead uniformity of ability and effort. The only fear is that the opposite extreme of individualism will be sought as a remedy. As between the practice by which forty or fifty pupils of all degrees of ability are required to do the same work with nearly equal efficiency, and a return to individual teaching such as was carried on in ungraded schools forty years ago, there is but little choice, although the ill effects of the two practices must be felt in widely different ways. But a choice between these extremes of practice ought not to be necessary. No more useful service can be rendered the public schools than that of devising ways by which the benefits of a class system of teaching will be secured, and at the same time such an adjustment of work be made as will permit pupils of varied abilities to do the most for themselves. To this task many educators have given much time and effort of late. Out of all the plans that have been devised, there should be found some which can be readily adapted to any conditions that are likely to exist. It is evident that no one scheme will do for all. A classification which can be made in large schools should not be made in small ones, and a system of promotion that is feasible in small ungraded schools would be wholly inoperative in large graded ones.

In responses to letters of inquiry to prominent school superintendents throughout the country, concerning plans of classification and promotion, over eighty replies have been received, from which the following facts and conclusions are gathered: —

The written examination as the sole means of ascertaining the pupils' fitness for promotion seems to be passing away. Out of the entire number of places reported, there are but seven in which entrance to the high school is determined solely by examinations, and only two in which promotions from grade to grade in grammar schools are so determined. It is pleasant also to record the fact that in only four cities is the determining element for admission to the high school the superintendent's examination alone. The teachers' judgment alone generally determines the class in which pupils of the primary schools are placed. Promotions from grade to grade in the

grammar schools of about two thirds of the places reported are based upon the combined judgment of the class teacher and that of the superintendent or principal. In a few instances the examination by the superintendent or principal is made the determining element in all doubtful cases only, or cases in which the teacher is not able to decide.

The intervals between classes or grades in about two thirds of the cities and towns reporting are one year. In the other third the intervals are one half year or less. In the report of the Commissioner of Education for 1890–91 returns from four hundred and sixty-five cities and towns of over four thousand inhabitants show the proportion of short intervals to be much greater than this. Several places report shorter intervals for the primary schools than for the grammar schools.

The methods of promotion will first be considered of those places in which the intervals between the classes are one year.

In about one half of the cities and towns reporting, special provision is made for individual promotions or promotions out of course. Where no such provision is made, there are reported either few individual promotions or none at all. Quite a number of superintendents report that the matter is left with teachers, with the request that pupils be promoted whenever they are qualified; but in such cases there is either no report of the number of individual promotions, or else the number of such promotions is so small they may be said to be rare exceptions. A few superintendents seem opposed to double promotions, on the ground that some portion of the course is either done slightingly or else entirely omitted, or, as one superintendent says, "Good pupils are spoiled by being advanced beyond their depth, merely because they are bright."

Where special provision is made for advancing pupils out of course, the widest difference of practice and of results is reported. In some cases the teachers are asked to report all pupils who by superior scholarship or by maturity are deserving of promotion out of course. A list of such pupils is kept by the principal or superintendent, and special facilities are afforded those who desire to be advanced. A few superintendents cause each grade to be divided into two sections, according to scholarship, thus enabling pupils to pass more easily from one grade to another during the year. In the primary schools

the pupils of a single class or grade are sometimes divided into three sections or groups in the same way. In one city where the latter plan is followed a modified form of the monitorial system is followed, in which the larger pupils from the highest grades often hear pupils of the lower grades in reading, either individually or in groups of two or three.

The group system of classification is carried out still further in a few towns, as in Leominster, Mass., whose superintendent reports as follows: —

> In the lowest grades we divide pupils into four or five groups, higher grades into three and sometimes possibly only two. Pupils pass readily from one group to the next higher without the so-called "jump," whereby a certain amount of work is always lost. Pupils in the most advanced group in a room are doing about the same work as pupils in the lowest division or group of the next higher room. This enables pupils to go readily from one group to another, and at the same time also from one room to another.

Several cities and a few towns report the opening of an ungraded school in each of the large graded school buildings. In this school are placed backward pupils or pupils who cannot be readily classified in existing classes. Here, too, are pupils who are trying to get into a higher grade. The superintendents in their letters and reports speak in unqualified terms of the great good accomplished by the establishment of these ungraded schools. In some places the same end is reached by one or more assistants going from school to school in a building to assist backward pupils or pupils who are trying to get into an advanced division.

A number of superintendents whose schools have the one year interval between the classes report a plan of dividing the classes into small sections in two or three essential subjects, and of permitting pupils who do especially well in these subjects to be pushed forward. Elizabeth, N. J., is a conspicuous example of this kind of classification. Here a class or grade of pupils is divided into three or four divisions in each of the most important subjects, as arithmetic and grammar, the divisions going forward as rapidly as they are able to, and continuing their pace even after the grade promotions are made. "Thoroughness in essentials" is made the motto. Individual

promotions are made generally at the end of each month, but it is understood that any pupil may be advanced as soon as he shows that he can do more for himself in another division. A complete record of every pupil is kept, which shows the exact amount and character of the work done, the pupil's characteristics, etc. This is a kind of life-book such as is made in the French schools, and is passed on from teacher to teacher, as the pupil advances. Last year's statistics show that twenty-three per cent. of the pupils earned irregular promotions, and that sixty per cent. of them were reclassified during the year and placed where they could do better work.*

Of other plans followed in schools having one-year intervals between the classes, a few will be given somewhat in detail.

The plan pursued in Cambridge, Mass., deals only with the grammar school course, which is supposed to cover six years' time of pupils of average ability. A few weeks after the pupils enter the grammar school, in September, they are separated into two divisions, according to ability, one division called grade A, and the other division called fourth grade. The pupils of grade A move forward with the aim of completing the prescribed grammar school course in four years, succeeding grades being called B, C and D. The pupils of the fourth grade go forward more slowly, aiming to do each year only one sixth of the work prescribed for the grammar school. The grades of these pupils in succeeding years are known as fifth, sixth, seventh, eighth and ninth. At the beginning of the second year the pupils of what was grade A, now called grade B, go into a room with pupils of the sixth grade. During the first part of the year the pupils of the sixth grade are in advance of the pupils of grade B, but, owing to the superior ability of the latter division, they all come together during the latter part of the year. At the beginning of the third year precisely the same conditions exist as existed at the beginning of the first year. The pupils of grade C recite with the pupils of the seventh grade for a few weeks, when a readjustment is made, the abler pupils moving on at a pace sufficiently rapid to finish the course in two years, leaving the others to finish it in three years.

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* The details of this plan were published in the "Atlantic Monthly" for June, 1897.

The fifth grade pupils are alone in a room under one teacher during an entire year; the same is true of the eighth grade pupils. In all other rooms there are two grades or divisions, one belonging to the four years' course and the other to the six years' course.

A pupil who begins with the fourth grade and remains in the slower division to the end of the course will graduate in six years, unless he has to repeat. A pupil who begins with grade A and remains in the more rapid divisions to the end of the course will graduate in four years. A pupil at the end of the sixth grade or of grade B may go on with a division which will enable him to complete the course in five years. Thus it will be seen that the entire course of study may be finished in four, five or six years, depending upon the strength or ability of the pupils, and all without the omission or repetition of any part of the course.

All promotions both from the grammar to the high school and from grade to grade are made by the class teachers, under the direction of the principal and superintendent. No pre-announced examinations are given, but there are frequent written reviews given by the teacher, the results of which help to determine the fitness of pupils to go forward. One feature of the plan which has helped it to succeed is that of the employment of a special teacher in each building, whose business it is to assist pupils who are behind in their classes in any studies, or who are trying to get into an advanced class. This assistance, however, is no essential part of the plan. It may properly be used with advantage in carrying out any plan.

Of the four hundred and sixty-seven grammar school graduates in the year 1896, eight per cent. completed the course in four years, thirty-three per cent. in five years, forty-nine per cent. in six years, and ten per cent. in seven or more years.

One good evidence of the benefits gained by the plan is the kind of work which is done by the pupils after leaving the grammar school. The following table, furnished by Superintendent Cogswell, shows how the pupils who completed the grammar school course in four years and in five years sustained themselves during the first year in the high schools, the results being compared with those of pupils who were six years in the grammar schools: —

In the Latin School.

Record of Three Different Classes.	Four Years in Grammar Schools.	Five Years in Grammar Schools.	Six Years in Grammar Schools.
First Year in High Schools.	Average in High Schools.	Average in High Schools.	Average in High Schools.
Class of 1897, . . .	79.3 per cent.	72.8 per cent.	66.9 per cent.
Class of 1896, . . .	80.4 " "	77.0 " "	71.6 " "
Class of 1895, . . .	78.7 " "	78.9 " "	76.4 " "
Average for 3 years, . .	79.4 " "	76.2 " "	71.6 " "
Whole number of pupils in the classes, . . .	21.5 per cent.	39.8 per cent.	38.7 per cent.

In the English High, General Course.

Class of 1897, . . .	79.7 per cent.	78.7 per cent.	72.2 per cent.
Class of 1896, . . .	85.9 " "	75.1 " "	76.4 " "
Class of 1895, . . .	77.3 " "	76.2 " "	73.4 " "
Average for 3 years, . .	80.9 " "	76.6 " "	74.0 " "
Whole number of pupils in the classes, . . .	13.8 per cent.	43.1 per cent.	43.1 per cent.

In the English High, Commercial Course.

Class of 1897, . . .	76.3 per cent.	69.0 per cent.	69.3 per cent.
Class of 1896, . . .	74.8 " "	70.9 " "	68.4 " "
Class of 1895, . . .	73.7 " "	73.5 " "	69.8 " "
Average for 3 years, . .	74.9 " "	71.1 " "	69.1 " "
Whole number of pupils in the classes, . . .	12.1 per cent.	38.4 per cent.	49.5 per cent.

In the Manual Training Course.

Class of 1897, . . .	78.6 per cent.	67.2 per cent.	61.7 per cent.
Class of 1896, . . .	79.2 " "	63.5 " "	65.2 " "
Class of 1895, . . .	72.6 " "	65.4 " "	65.9 " "
Average for 3 years, . .	76.8 " "	65.3 " "	64.2 " "
Whole number of pupils in the classes, . . .	9.9 per cent.	39.5 per cent.	50.6 per cent.

To the criticism that this plan of classification can be used only in large systems of schools or in large buildings, it may be said that in one of the Cambridge schools, where the plan

is in full and successful operation, there are only three hundred and thirty pupils distributed in six rooms, one room having eighty pupils, with two teachers. Of the present graduating class, numbering fifty pupils, four will probably have completed the nine years' course in six years at the time of graduation, twelve in seven years, sixteen in eight years, fifteen in nine years and three in ten years. Principal Cutter of this school says of the plan: —

It is my belief that the plan can be successfully carried out in a school requiring but four or three teachers. There is more than one way to bring about a desired result. The eighteen pupils who were last year in grade A entered in September the same room with grade VI., and are now well abreast of the pupils of this grade. The same thing is true of the ten pupils of grade C in joining the ninth grade. In neither case is there a pupil who is now failing to sustain himself with credit. I am a hearty believer in the scheme; and it can no longer be said that in a graded system the brighter pupils must be kept marking time to the pace of the slower ones.

Added testimony to the adaptation of this plan to a small system of schools is found in Middleborough, Mass., whose enrolment of pupils is about eleven hundred, the enrolment in the three buildings where the plan is in operation being four hundred and seventy-four, with eleven teachers. Of the present graduating class, numbering fifty, about fifteen will complete the course in one year less than the prescribed time. Concerning the advantages that may be claimed for the Cambridge plan, Superintendent Jacoby writes as follows: —

1. It gives pupils an opportunity to do the grammar school work in four, five or six years, without omitting any essential part of the work.
2. It enables pupils to better use their ability and time.
3. It permits the grouping of pupils of the same degree of advancement, thus making the conditions for successful work more favorable.
4. It does not complicate or destroy the organization of the schools.

In Woburn, Mass., a plan of "double promotions" has been in operation for some years, and has been attended with good results. In the primary schools the interval between classes is made short by dividing the pupils into small sections. As

there are three or more sections in each room, the class intervals are so short as to permit frequent changes, the section rather than the grade being the unit of promotion. The nominal time for the completion of the primary school course is three years, but many complete it in much less time. In each of the grammar grades the essential features of the entire work prescribed for the year are taken during the first half year, and those pupils who have successfully performed the work, especially in language and arithmetic, at the end of the half year, are promoted to the next higher grade. During the second half year a more minute study of the topics in language and arithmetic already pursued is made, by which an opportunity is afforded for new pupils to do the work of the grade, and for those who have done it imperfectly to review it. By this plan bright pupils are given the opportunity of passing through two grades in one year. The number of pupils who won mid-year promotions last year in the grammar grades was one hundred and twenty-nine, of whom one hundred and four received a second promotion at the end of the year. The number of mid-year promotions in 1895 in the same grades was three hundred and fifteen. Of this number, all but seventy-eight were again promoted at the end of the year. The present total enrolment in the ninth grade is one hundred and forty-five. Of these, three have completed the nine years' course in six years, ten in seven years, thirty-three in eight years and ninety-nine in nine or more years.

Some possible objections to the plan are met by Superintendent Emerson, who says: —

> The conditions of promotion in every case are punctual and constant attendance, high rank, good conduct, good health and the consent of parents.

And again: —

> This special adjustment of the work in language and arithmetic is necessary on account of the nature of these subjects, each principle being so related to those that precede it that the pupil is obliged to carry in his mind a general outline of the entire subject. This is not true of the other branches of study, such as geography, history, spelling, etc. It is of little moment which hemisphere is studied first, which continent shall have the precedence, or in what order the countries of a given continent are studied.

In Keene, N. H., a plan has been in operation for three years which embodies some features of plans already described. Its resemblance to the Cambridge plan consists in the division of two grades into A and B sections, one of which goes forward at a more rapid pace than the other, with opportunity for pupils to cover a six years' course in four or five years. Its plan of reviews at stated times for the convenience of those who omit some portions of the work, as well as for those who need more drill in the subjects reviewed, resembles in some respects one of the essential features of the Woburn plan. In the Keene plan, the A or advancing divisions do not work ahead in all subjects, but only in those subjects in which consecutive work is necessary, as grammar and arithmetic, the plan resembling in one important respect those followed in both Elizabeth and Woburn. There are other features of the Keene plan which are unique, and show the value of skilful planning and careful oversight. There are ten grades below the high school. Of ten hundred and fifty-six pupils belonging last year, forty-eight special promotions were made during the year. In the present graduating class of eighty-four in the grammar school, fourteen will have completed the course in nine years, four in eight years and one in seven years.

The reports of plans of promotions in schools having short intervals between the classes are almost as varied as those already referred to. In nearly all of these schools the reported number of double promotions during the past year far exceeds the number reported from schools where class intervals are one year in length, the percentage of such promotions, based upon the number of pupils enrolled, ranging from three to thirty per cent. In a majority of this class of schools there are twenty-week intervals between the classes, regular promotions being made twice a year. When two sections twenty weeks apart recite in the same room to the same teacher, transfers from the lower to the higher divisions are said to be comparatively easy to make. Sometimes the classes, especially when they are large, are separated into two or more divisions, making the intervals between the divisions only ten or twelve weeks. This arrangement is not unlike that which is made in several cities and towns by which all the pupils are divided

into small sections according to attainments, with provision for promotions at the end of eight, ten or twelve weeks. There are some differences in the details of plans followed, but in general the principle recognized is the same, which is to make as short intervals between the classes as possible, with frequent promotions. This principle was applied in the classification of the elementary schools of St. Louis, twenty-five years ago, under the direction of Dr. Harris, now Commissioner of Education. In his report of 1871–72 Dr. Harris thus describes the plan as directed by him: —

The principle is clearly this: not a procrustean bed of grades, on which the school is to be stretched so as to reduce the number of grades of advancement to ten or any other special number, but a thorough classification of all the pupils into classes on a certain quota as a basis, whether this be thirty or twenty-five, or whatever other number is considered the best. The endeavor will be to have the classes separated by as small an interval as possible; but four, six or even ten weeks' work is small enough for all practical purposes; and, in order to make this arrangement uniform, the pupils in the upper grades, when too few to form classes with the required quota, should be brought together in central schools. If the highest grade in the high school consisted of sixty pupils or more, the division of it into two classes would be required.

This process of continual readjustment of classification in our schools will render the whole system elastic and mobile. Like the current of a river, there will be everywhere forward motion; in the middle the current is more rapid, at the sides the current flows more slowly. The work of the grade laid down for a year's study will be accomplished in three or three and a half quarters by the brightest; by the dullest and slowest, in five quarters. There will be no temptation to push on a slow pupil or drag him beyond his powers; no temptation to promote a pupil to a new grade's work before thoroughly completing what is below his.

To the possible objection that may be urged against the plan, Dr. Harris writes as follows: —

There may be some points on which doubts may rest. For example, it may be urged that this system would cause a collection of dull and stupid pupils into classes by themselves, — a deplorable result. But this is one of the evils which this system is adapted to correct. The

fact that the best pupils from below are allowed to rise through the masses above them as fast as their ability can carry them is surely not likely to prevent the slower pupils, who are their companions, from exerting all their energies and making considerable progress. The stream of bright pupils from below is inexhaustible. From the primary grades it ascends, continually passing fixed points or points that move on more slowly. In every class there will be its quota of bright pupils, some leading the class and some just sustaining themselves in it, having recently joined it. But in the old system all the bright pupils had attained the top of the class, and the dull ones had fallen hopelessly to the bottom long before the needed reclassification took place.

Another may urge that this system causes so rapid a change from teacher to teacher that the very important personal influence of the teacher is materially impaired. But under this system in the higher grades the pupil would hardly change teachers oftener than once or twice a year, and a change as often as this is desirable for the healthy individual culture of the child. The school should not be a family influence exclusively. It is the transition to civil society; consequently, the pupil must change teachers often enough to correct any one-sided tendencies of social culture that he may be liable to acquire from the individual teacher. For it must be remembered that reclassification of a whole school of seven hundred pupils, distributed through twelve rooms, does not imply a change of teachers on the part of more than one sixth of the pupils, even when one third of the best pupils in each class are promoted to the next higher. Each teacher, having two classes (or in the lower grades three classes), will have one third of the pupils from her advanced class promoted to the lower class in the next room above. She will likewise receive from the next room below one third of the pupils from the advanced class there. In her own room, one third of the pupils will be promoted from her second to her first class, but will still remain under the same teacher. In fact, she will have promoted to the next room one sixth of her pupils, and have received one sixth from the next lower room, — that is to say, one third is promoted from each class; but practically this is the maximum, and in ordinary cases a less proportion of the class will be transferred. If reclassification is instituted four times per year, and on each occasion one sixth of the pupils are promoted to the next room, it will follow that each pupil will be taught one year and a half by the same teacher. But, as frequent transfer is necessary in some schools, to make up for the depletion of pupils in the higher grades, it will happen that this period will be reduced one half or two thirds.

The question is likely to arise: Do these pupils who are promoted from one class to the next omit that portion of their studies gone over in the interval of time between the two classes? It is expected that this will be taken up by a review of the ground embraced in the mentioned interval.

Of the cities in this country which have adopted this plan in whole or in part, Dayton, O., may be mentioned as a conspicuous example. Of the plan in Dayton, Superintendent White writes: —

The aim is to have from thirty to thirty-five pupils in each room. The work is assigned for the year by grades. The pupils of each grade are assigned to rooms, as before stated, commencing with the one having the highest standing, and so on down to the end. In districts where there are several rooms of the same grade it makes classification very close, and enables the teacher to present the work to each class in such a manner as to be within the comprehension of each individual child. Each of these rooms is again divided into two classes, according to standing, and the work is presented to the two groups separately. When the work for the ensuing year is completed, the pupils of any group, or any particular pupil in the group, may be advanced to the next higher grade at any time within the year.

We are trying to preserve the class organization and retain the benefits of class instruction at the same time that we are utilizing the individual instruction of pupils.

Our teachers, principals, patrons, pupils and Board of Education take kindly to the new arrangement, and the work of the schools is perhaps more harmonious than it has ever been in its history. This arrangement takes closer and more methodical supervision, and a great deal of patient, skilful work on the part of those in authority, but we anticipate for it very gratifying results.

It is asserted by some that this plan is only adapted to the schools of large cities or to schools of large size. Two cities of small size report that they are following the plan essentially with success, — Le Mars, Ia., and Centralia, Ill. Of the work in Le Mars, Superintendent Coleman writes: —

Our class intervals are short. In the primaries they are from six to eight weeks, in the grammar grades from eight to twelve. At

intervals varying somewhat each class is reviewed back to the next lower class; but all pupils *very* strong in the work, as indicated by the recommendation of the teacher, are excused from said review, and are promoted to the class that reviews to meet them. Our rate of progress between these reviews is determined largely by the ability of the stronger members of the class, as we expect the others to review soon. This is our sixth year on this plan, and we find an increasingly large number of pupils ready for the promotions.

We have admitted three classes into our high school this year, one in September, one the first of November and one in December. There are forty-nine pupils in these three classes, and *five* of them took ten years to complete their preparation for the high school; *five* took nine years; *eight* took eight years; *thirteen* took seven years; *fifteen* took six years; *two* took five years; and *one* took four years.

In the Centralia schools four hundred and twenty-five pupils, or over thirty per cent., out of thirteen hundred and seventy-four, the whole number belonging, were promoted out of course last year. Of the plan pursued Superintendent Mather says: —

Our system of promotion has to do largely with the individual pupil. Each grade is divided into A and B sections. No grade in the system is more than six weeks, or seven, beyond the next lower. When a pupil, in the judgment of the teachers, is able to do the work of the grade beyond, he is promoted to it. With my strong teachers, those of good judgment, I permit the recommendation to take the place of an examination. Every month and many times every week pupils are promoted. By keeping the grades thus far apart the school is not disorganized, and sufficient encouragement is given to all pupils.

Thus far I have given somewhat in detail the plans of grading and promotion culled from letters and reports which are in actual operation in this country. They express in forcible terms the feeling of opposition quite generally felt in progressive centres to the lock-step marching by platoons from grade to grade, which still characterizes the practice of grading and promotions in many schools of both hemispheres.

In all the examples given there is doubtless much that is good. It is evident, owing to varied circumstances, that no

one plan is suited to all places; and yet it is possible to select certain common elements of excellence, and from them derive some principles of value to all who are seeking to solve the difficult problem of making such grading and promotions as will give individual pupils the largest measure of opportunity. To these principles I will add some conclusions of my own, based upon experience and observation, and upon opinions from trustworthy sources.

1. First as to length of intervals between the classes. It is significant, that although in my recent inquiry only about one third of the places reported shorter intervals than one year, and in the investigation made by Commissioner Harris in 1893 the proportion of places having short intervals was but a little greater, the opinions of superintendents as shown in the latter investigation very generally favored the shorter interval; only sixty-five out of four hundred and sixty-five reporting as being in favor of the one-year interval. I place, therefore, first, among the principles of grading, the making of as short intervals between the classes as circumstances will permit. In a collection of children numbering one hundred or more the graduation should be of such a kind as to permit intervals of one half year or less in at least two branches of study; and where the number of children is more than two hundred, such intervals may profitably exist in nearly all the required studies. Where the numbers warrant it, as in buildings having four hundred or more pupils, the intervals should be nine or ten weeks in all subjects, and may be less than that in some subjects. Where the number of pupils covering the entire course must be placed under the charge of two teachers, their distribution will depend upon circumstances, such as the relative number of advanced pupils, number of beginners, etc. But generally it may be said that a little more than half of the work usually assigned to the course should be given to the primary teacher, and the rest to the grammar school teacher. An arrangement of classes in both rooms should be made by which the intervals are less than one year between classes in sequential subjects, like reading and number in the lower grades and arithmetic and grammar in the upper grades. With such classification pupils should be permitted to recite in an advanced division in

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any one or two subjects, whenever they show ability to do the work of that division, with a view of working up into a higher grade in all subjects.

2. Where the work of one teacher must cover the entire course, close gradation in all subjects should be avoided. The pupils may be heard together or in two or three divisions in all subjects whose parts are not closely dependent, like language, nature study, geography and history. In other subjects, as arithmetic, grammar and some parts of reading, the school should be divided into four or more divisions. Pupils should be permitted to recite in any division or in any subject in which they can do the most for themselves, and be permitted to pass from one division to another whenever they show that it is for their advantage to do so. The more advanced divisions in some subjects may be heard two or three times a week, with correspondingly long lessons assigned if they are full-time subjects. The number of daily recitations in rural schools will depend upon circumstances, but should not exceed twenty.

3. The course of studies as far as possible should be made so as to assist the teacher in adapting the work assigned and called for to the abilities of all pupils in every class. This can be done by designating important or principal features which must be taken by all for a proper understanding of the subjects, and by suggesting supplementary work that may be done profitably by pupils after they have acquired the necessary portions, and while they are waiting for others who have not acquired them.

4. Regular times of grade or class promotions are desirable with special arrangements for the promotion of individual pupils or of sections of pupils whenever they show their ability to perform the work of a subsequent grade. A specific plan for irregular as well as for regular promotions should be made and carried out by the principal or superintendent. As a rule, merely general directions or a reliance upon the judgment of the teachers to promote pupils out of course is not sufficient to meet the requirements of all cases.

5. "Double promotions," where the intervals between the classes are one year or more, or where there is no arrangement

by which the work in sequential subjects of all grades is covered, may be a benefit to some pupils in the saving of time, but are likely to be attended with dangers that do not offset the benefit gained. If the course of studies is what it should be, there is, in "skipping" a portion of the work, a loss which cannot be easily made up.

6. Pupils should not be heard in recitation together in all subjects, but should be separated into two or more divisions, one division of pupils being given an opportunity for study while others are reciting. In some exercises all the pupils of a grade may recite together, as in penmanship, and some kinds of language and nature study in the lower grades, and in some forms of written and oral reviews in the upper grades. In some subjects, like arithmetic and grammar, at least three divisions of a class may with profit be made. In large buildings the divisions may be distributed in the rooms on the basis of those subjects in which the shorter interval is made; that is, two or three divisions in arithmetic, constituting one class or grade, may be placed together in one room.

7. Promotions from grade to grade should not depend upon examinations made by a person other than the class teacher. In general, the class teacher should determine the promotion or non-promotion of all pupils whose ability or non-ability to perform the work of the subsequent grade is unquestioned by her. The place of all other pupils should be determined by the principal or superintendent, by means of examinations and such other evidence of their ability and needs as is attainable.

8. Provision should be made in the course of studies for reviews at such times and in such subjects as will permit rapidly advancing pupils to lose no part of the work outlined in the course.

9. Wherever it can be done, the help of one or more assistant teachers should be secured, whose special work will be to give assistance to backward pupils, or to pupils who are endeavoring to work up into a higher division or grade.

10. For the purpose of knowing the characteristics and needs of individual pupils, a teacher should be in charge of the same class of pupils for at least one year. In some cases, where pupils are promoted out of course from one room to

another, the time of such pupils with one teacher might be less than a year.

11. Although the number of pupils to a teacher has not been a special object of inquiry in this investigation, it has been brought out incidentally that attention to the needs of individual pupils demands that in no case should there be more than forty pupils to a teacher; and that, where the ages and attainments of pupils are widely different, as in so-called ungraded schools, no teacher should have more than twenty-five pupils.

JOHN T. PRINCE.

JAN. 1, 1898.

THIRD REPORT

UPON A

COURSE OF STUDIES FOR ELEMENTARY SCHOOLS.

BY

JOHN T. PRINCE,

AGENT OF THE MASSACHUSETTS STATE BOARD OF EDUCATION.

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REPORT.

In previous reports upon a course of studies for elementary schools* I presented some conclusions based upon a careful inquiry respecting the opinions of prominent educators and the practices of types of the best schools in this and other countries. These conclusions relate to (1) the age of admitting pupils, (2) subjects of instruction, (3) the grouping of subjects, (4) the relative amount of time which should be given to each group, (5) correlation of studies, (6) departmental instruction, (7) elective studies, and (8) the grading and promotion of pupils. There remain to be considered four other features of a course, viz., the scope, relations, sequence and limitations of the various subjects.

The consideration of these features will be confined mainly to suggestions and recommendations for the making of a course, followed by a brief outline of a general course. The conclusions reached are drawn from observation and experience, supplemented by a careful study of some of the best courses in the country and of various general and special reports that have been made.

Before referring to the special subjects of a course, I desire to direct attention to some general features of existing courses of studies and practices relating to them.

My observations of schools, coupled with the present investigation of courses of studies, have led me to believe that the plan of putting before teachers a detailed statement of all they are expected to accomplish during fixed periods of time, is wrong in principle, as it is harmful in practice. Some courses even go so far as to point out the exact pages of the text-book which are to be gone over in a given period, the presumption

* See reports of Massachusetts Board of Education, 1895-96, pp. 437-480, and 1896-97, pp. 279-314. These reports are also printed in pamphlet form, and will be referred to in this report as "Preliminary Report" and "Second Report."

being that the topics included in those pages constitute the entire work of all the pupils. The leveling system is complete where examinations based upon these requirements are given by some one other than the teacher. Nothing in this inquiry has been more evident than the fact that much more should be done than is now generally done to reach individual pupils, by giving them instruction and training suited to them both in kind and amount. The excessive number of pupils to a teacher found in most schools renders it impossible to accomplish this result in any degree satisfactory to the best teachers. The brighter and quicker pupils, as well as the duller and slower ones, are not reached in the way they should be reached. The present generally followed plan of keeping together for long periods all the pupils of a large class upon the same kind of work is harmful alike to the quicker pupils and the slower, — to the former in undue suppression and lack of stimulation to healthful effort, and to the latter in discouragement and superficialness.

It is well known that the tendency of unwise and unskilled teachers is to emphasize the quantitative rather than the qualitative side of their work; to regard the work of teaching mainly as an assistance to the pupils in obtaining a certain amount of knowledge or information, and, as this can be measured best by the pages of the book or the per cent. marks in an examination, these standards are uppermost in their minds. The method of apportioning the subjects and topics in a course of studies so that the attention is fixed mainly upon the amount to be learned tends to strengthen these convictions of unwise teachers and places unnecessary restraints upon wise ones. It may be said that, whenever a course of studies gives a great degree of freedom to teachers, there is likely to be a neglect of essentials and a weakening of work that may be called consecutive. But this can be true only of unwise and unskilled teachers. With those teachers who understand what all their pupils most need and who know how they are best to be provided with it, the faults above alluded to are not likely to exist. To them the fixed bounds of non-essentials stand in the way of a proper adjustment of the work to the needs of the pupils. In matters only that are essential or important should limitations be indicated in a course of studies. But even the limits of the

essentials of knowledge might well be omitted in a course to be followed by one teacher alone. It is only in a system of schools where two or more teachers are employed that a limited plan or program of studies is needed. The fact that the non-essential subjects are almost limitless in number and kind renders it impossible to make a selection of such subjects which will be suitable alike for all schools and classes or for the pupils of all teachers.

For these reasons, a course of studies intended for the schools of a large section, as of a county or State, should first of all be general in character, and be confined largely to the designation of subjects that are essential or important. This course may well be used as a basis of a more detailed course for a comparatively small group of schools. Moreover, the subjects assigned to particular times should be so arranged as to permit a division of the school into groups or sections of pupils of different degrees of ability. Further, the subjects should be so arranged as to permit extra work to be done by individual pupils. This feature of a course was mentioned in one of the recommendations contained in the report upon the grading and promotion of pupils. It was as follows: —

The course of studies as far as possible should be made so as to assist the teacher in adapting the work assigned and called for to the abilities of all pupils in every class. This can be done by designating important or principal features which must be taken by all for a proper understanding of the subjects, and by suggesting supplementary work that may be done profitably by pupils after they have acquired the necessary portions, and while they are waiting for others who have not acquired them.*

One other feature of a general course of studies should appear, — that of giving all subjects such a place as will permit a rational and orderly correlation of the studies not only of a single group but also of all groups so far as it is possible to do this. Upon this and other points the recommendations of the Second Report are as follows: —

1. The selection of topics should be so made as to be of general use. This general course to serve as a basis for more detailed courses in given localities.

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* Page 36 of Second Report.

2. The selection of topics should be made from all groups, so that at least one subject of every group will be presented for a given time.

3. The selection of topics from each group for a given time should be made with reference to their logical relations to the topics of all other groups, so far as the nature of the subjects and a proper treatment of each will permit.

4. No reference to a centre or to centres of correlation need be made in the general course, it being understood that each subject taught will be the centre, with which all other subjects at the time will be correlated.

5. No reference to the place or time of isolation in teaching need be indicated, since that and all other matters relating to methods of treatment will be left to the teacher.*

It may be necessary to designate periods of time during which prescribed work must be accomplished, but it should be done in such a way as to permit the elastic system of grading and promotions recommended at the close of the Second Report.† This may be done by designating the *minimum* of work which is to be done within certain periods, and by placing in a parallel column the time at which all that goes before shall be completed. The outline of subjects thus presented will be only the essential or most important work required to be done.

Some superintendents follow the plan of placing a general course before their teachers, and of supplementing this course by specific directions in monthly grade meetings. This plan succeeds well where too many details are not given, and where the independence and originality of the teachers are not interfered with. It has the advantage of affording opportunity for constant adjustment of work to new and varied conditions, and of assisting untrained or inexperienced teachers in a proper interpretation of directions. This plan is especially advantageous for directors of special subjects, like drawing and nature study, inasmuch as it gives opportunity for instructing teachers in technical details which are not well understood by them.

The plan of issuing separate pamphlets or slips, containing the prescribed work for each subject in all the grades, has the advantage of bringing before each teacher a statement of what is expected to be done in a given subject in all the grades, thus

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* Page 13 of Second Report. † Pages 35-37 of Second Report.

making it easy for every teacher to know what every other teacher is expected to do, — a necessary condition for good work. This practice of teachers is likely to be discouraged and the work narrowed by following the plan adopted by a few superintendents, in presenting the prescribed course of each grade in a single pamphlet.

The features of a course of studies which I shall consider briefly in this report are: first, the scope or aim and range of subjects to be presented under each group; second, the relation which the subjects of a group bear to each other and to the subjects of other groups; third, the sequence or order in which the various subjects or parts of subjects should be presented; and, fourth, the limitations both in time and substance which should be made in each branch of study.

The aim or purpose of a given subject may be general and remote, or specific and immediate; a course of studies has to do mainly with the former, the latter aim belonging more to a statement of methods which are supposed to be known by teachers. The range of topics outlined in each branch of study will be determined partly by the aim and partly by the conditions under which the school is carried on, — these conditions being the number of pupils, the number of classes, the length of the course, the number and character of the teaching force. It is understood, of course, that, as "preparation for complete living" is the end of education, so all subjects and parts of subjects that do not contribute to this end are to be excluded from the course.

The subjects of study should be so placed in a course as to assist the teacher to correlate them in teaching; that is, to present them in right relations, by which each fact of knowledge or information acquired shall be fortified and enriched by others, and by which good habits of thinking shall be encouraged. So far as possible, the relation of each subject to its use, and especially to its use in life, should be indicated.

The sequence or order in which the various topics should be presented is determined by their relations of dependence one upon another, and by the natural order in which the mind acts. The sequence of subjects in a course should not be so marked or finely drawn as to cause the teacher to think more of the

relation or dependence of subjects one with another than of the relation of each subject to the mind and life of the child.

The limitations of any branch of study in respect to time and subject-matter will be determined largely by the relative importance of that branch or of the subjects of that branch as a means of accomplishing the ends to be desired. Other limitations are those which are determined by the length of the session and school year and by the number of classes and pupils to a teacher.

The percentages contained in the tables of the Preliminary Report of this series are intended to show the relative importance of the various subjects, and the time program on page 44 of that report shows the actual time given to each group of subjects, on the supposition that the school day is five and one-half hours long, and that there are five school days in the week. For future reference in the apportionment of time limits to separate subjects, that table is here reproduced, with change of groupings made in Table XV., in which literature is classed with language instead of history. The table is as follows: —

Time Program, showing the Number of Minutes a Week spent in Recitation by a Pupil or Group of Pupils in Five Groups of Subjects; also the Number of Minutes a Week given to Opening Exercises and Recesses and to Study in School.

GROUPS OF STUDIES.	Sub-primary.*	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.
I. Language and literature, .	348	378	378	371	312	320	320	380	380
II. Mathematics, ...	72	108	108	146	156	160	160	184	230
III. Elementary science, . .	240	108	108	146	195	200	200	184	138
IV. History, ...	120	90	90	97	117	120	120	172	172
V. Miscellaneous, . . .	420†	216	216	215	195	200	200	230	230
Opening exercises, physical exercises and recesses, . . .	–	250	250	225	225	200	200	200	200
Study in school, ...	–	500	500	450	450	450	450	300	300
Total school time, . . .	1,200	1,650	1,650	1,650	1,650	1,650	1,650	1,650	1,650

* Figures in this column indicate the number of minutes spent in recitation and busy work taken together.

† Including physical exercises, games, kindergarten occupations, etc.

It should be understood that the figures in the above table represent the amount of time given in recitation only by a

pupil or a group of pupils. They do not express the amount of time given to study, which of course will depend upon the number of sections in a room and upon how much the sections recite together.

In considering the five groups, the subjects of scope, relations, sequence and limitations will be set off by figures in the order named.

Group I. — Language.

1. Language is the expression of thought. The term as used in the school curriculum is intended to mean the expression of thought in words. As a subject of instruction, it relates to getting thought by means of the printed or written page, and to expressing thought both by speaking and by writing. Language, therefore, includes upon the practical side reading and composition. Upon the theoretical side it includes grammar, rhetoric and logic, the elements only of which should be taught in the grammar school, and always in close connection with reading and composition. In some schools a foreign language may be taught during the last years of the grammar school course, the subject being offered as an elective for those who can carry on the regular English branches.

The immediate aim in language teaching is the power to gain and communicate ideas through written or spoken words. This will involve (*a*) power to read intelligently and (*b*) power to speak and write correctly and effectively.

The reading must include, first, a mastery of the symbols, that is, learning to read; and, second, such companionship with and study of good literature as shall develop power to understand and appreciate the best in literature.

The power to speak and write correctly and effectively involves, first, the mastery of written and spoken forms in accordance with accepted usage; second, analysis of language to discover the rules of usage; and, third, constant practice in speaking and writing, both before and after such analysis.

While the elementary course in grammar has for its chief end correctness, it may also include some features of effectiveness, such as clearness, conciseness and force. The most important fact to be kept in mind is that the study of this subject in the grammar school should be elementary and very

practical, the aim being to teach principles by which the pupil is enabled, first, to understand the language of literature; and, second, to express his thoughts in some measure as they should be expressed. An incidental but by no means unimportant end in the study of grammar is mental discipline, — a power of the mind to generalize, to make rules from facts, and to apply principles and rules to practice.

2. It is plain to see that all forms of language as branches of study are closely related to one another and to nearly all other branches. The forms of expression in the reading books become models for imitation and practice in all departments of composition work, which serves both as a means and as an end of grammar and rhetoric. The relation of the theoretical side of language to practice both in reading and in writing should be indicated by prescribing practice in analysis of sentences and in constant application of the rules of syntax most frequently violated.

The work in composition should be closely related to the pupils' thinking; and, as the regular subjects of study are supposed to occasion thought, they therefore constitute a good basis for language in the recitation. Moreover, the regular studies, especially geography, history, science and reading, should furnish topics constantly for composition.

Some of the most obvious relations which the branches of this group have with one another and with other subjects of study are matters of apperceptive teaching, which every good teacher understands, and which therefore need not be indicated in a course of studies.

3. In securing a mastery of forms in language, a certain definite order should be followed. In learning to read, that order is governed by a well-known principle of proceeding from a vague knowledge of the whole through analysis and synthesis to a clear knowledge of the whole. While a course of studies may not give the steps by which this principle is observed, it may properly state that the teaching should begin either with words alone or with words in sentences, and that analysis and synthesis of words follow in natural order. It may also state that the first words and sentences should be read from the blackboard, and afterwards from the chart and from the first readers. The order to be followed at this stage in the

selection of reading material is sufficiently indicated by the ordinary first and second readers. The order of selection after the pupils have acquired skill in reading should be determined by the tastes and abilities of the children, the selection to be made from given lists of books.

The sequence to be followed in the technique of writing may be sufficiently indicated by stating that during the first two years much copying of good texts should be done, beginning with words whose letters are easily made, as *man* and *cow*, and proceeding by degrees to words more difficult to write. Some courses prescribe much practice with single letters to be taken up in a given order.

In spelling, it appears to be the custom in the best courses to prescribe some oral spelling for the lower grades, the main attention, however, to be given to writing words in sentences. The words selected for drill in these grades are to be found in the regular reading books. Beyond the third grade, in addition to the words used in the composition exercises, lists of words such as are found in a good spelling book may be used with profit for dictation, the words to be written both singly and in sentences.

English grammar may be regarded as one of the few strictly sequential subjects of the elementary course. Each topic should lead up to the next, and all should have distinct reference to the ends already pointed out. The following general outline shows the order which may be pursued in an elementary study in this subject: —

(1) The sentence and kinds of sentences defined.
(2) Subject and predicate, simple and complete.
(3) Parts of speech.
(4) Limiting phrases and clauses.
(5) Nouns, — kinds and forms.
(6) Pronouns, — kinds and forms.
(7) Rules of syntax, respecting case of pronouns.
(8) Verbs, — kinds and forms.
(9) Rule of syntax, respecting the form of the verb.
(10) Adjectives, — kinds, forms and uses.
(11) Adverbs, — kinds, forms and uses.
(12) Prepositions, — uses.
(13) Conjunctions, — kinds and uses.

4. The amount that can be done in the various language subjects will depend largely upon the grade and natural abilities of the pupils. The exact amount to be done in some subjects should not be prescribed, while in others the amount prescribed will indicate the least that should be done in a given period, with a provision for sufficient time to permit classes or individual pupils to do as much as they are able to do.

At the end of the second year the pupils should have so far mastered the symbols of reading as to read easily at sight any ordinary second reader. To accomplish this, several first readers and several second readers should have been read through during the two years. After the second year the reading should be carried on in the two lines already indicated, an average of ten pages a week of each kind being required in all grades. It should be remembered that this is the minimum required, and does not include the amount of reading done at home or the extra reading by individual pupils. In most schools probably the limit set is no more than half of what can be well done.

Except in special instances, no set exercises in writing should be given after the fifth year. Whatever is needed to secure legibility and rapidity of writing after this time should be done in connection with the composition and dictation work.

Most of the special instruction in spelling should be given during the first six years. With the exception of occasional reviews, the work in this branch during the last two years of the course should be confined to the correction of words misspelled in the composition and other written exercises.

The limits in written language are difficult to define. It is understood that more depends upon the quality of work done than upon the quantity; and yet it is manifestly the latter feature only that can be presented in a course of studies. An average of ten lines a day of carefully written original work during the entire course beyond the second grade, and an equal amount of dictation for instruction in punctuation, spelling, etc., from the third to the sixth grades inclusive, should be the minimum of written work required, it being understood that monthly compositions should be required of all pupils in the three highest grades.

In designating the subjects of this group, no mention was

made of memorizing choice selections of poetry and prose. While such an exercise may be brought into close connection with the reading and dictation, particular mention of it should be made in the course. An average of at least ten lines a week should be required to be memorized by pupils of all grades, it being understood that the selections memorized shall be of a high order of literary merit, and adapted to the capacity of the children.

The necessity of limiting the study of grammar in the grammar school to the elements of the study and to its use in analysis and syntax has been referred to. Only those properties of the parts of speech should be required to be learned that are needed for analysis of sentences and for a proper understanding of the rules of syntax. These rules should be limited to rules which are most commonly violated. Not more than ten rules should be made and learned, but they should form the basis of constant practice in the construction of sentences. These and other limitations of the subject appear in what has been said upon the sequence of topics to be studied.

Where there are so many branches in a group as are included in this group, it may be well to designate approximately the amount of time to which the recitation in each branch should be limited. For example, if the recitation time for the language studies should be as given on a previous page of this report, the allotment for each branch may be based upon that time, as shown in the following: —

Time Program, showing the Number of Minutes a Week spent in Recitation by a Pupil or Group of Pupils in Reading, Writing, Spelling, Composition and Grammar.

SUBJECT.	Sub-primary.	Grade 1.	Grade 2.	Grade 3.	Grade 4.	Grade 5.	Grade 6.	Grade 7.	Grade 8.
Reading,	198*	190	190	150	120	120	120	120	120
Spelling,	100	50	50	50	50	50	200	160	160
Writing,		60	60	75	60	60			
Composition,	50	78	78	96	82	90			
Grammar,	-	-	-	-	-	-	-	100	100
Totals,	348	378	378	371	312	320	320	380	380

* Including story-telling.

It should be understood that the above figures are only tentative and approximate, and are given merely to show how an apportionment may be made under given conditions. It should be understood also that the time given is the recitation time only of a pupil or group of pupils. The time for writing at the seat outside of recitation in copying or composing is not counted. One advantage as a saving of time which composition, spelling and writing have over some other subjects should be taken into account, and that is the practicability of having all the pupils of a school recite together.

Group II. — Mathematics.

1. Mathematics, or the knowledge of quantity and space relations, is taught both for its practical and for its disciplinary value. In the elementary schools it is taught mainly as an art, although the foundations of mathematical science are laid throughout the grammar school course, and in the upper grades something of the science itself is taught. The department chiefly pursued in the elementary schools is that of arithmetic, the elements of geometry and algebra being taught in the upper grades. To these is added a simple form of book-keeping, which may be regarded as an extension of the practical side of arithmetic.

Arithmetic is a knowledge of numbers, their expression, relations and operations. The numbers to be learned are integral and fractional, simple and denominate. So much of this knowledge should be acquired as will help the pupils to solve all the ordinary problems of daily life, and at the same time to serve as a means of mental discipline. The scope of arithmetic in successive grades will be determined largely by the power of the pupils to grasp new relations and conditions. In recent courses a broad basis of subjects has been prescribed in the lower grades, including fractions (both common and decimal), percentage and measurements. The two kinds of work, computations with abstract numbers and work in practical problems, should be presented in all grades, the amount of the former decreasing and of the latter increasing in successive grades.

The aim of geometry in the grammar school is chiefly to supplement the course in arithmetic, and to furnish a good basis for instruction in mechanical drawing and manual training. The work required should be both constructive and inventional, supplemented by as many simple demonstrations as circumstances will permit, the aim being to make the work as practical as possible.

The design of algebra in the grammar school is to give pupils a general idea of numerical relations and operations. Besides furnishing short and easy solutions of problems which are in arithmetic quite difficult, algebra gives pupils the power to state in general terms the conditions of a problem and the process of its solution, and thereby to deal with formulæ and rules more easily than by arithmetic. Moreover, the elementary work in algebra may be so arranged as to give support to the higher form of the study in the high school.

Bookkeeping may be regarded as only one of the many practical applications of arithmetic. Its end in the grammar school is ability to keep accounts which would be ordinarily needed by a farmer, mechanic or small retail shopkeeper. Incidentally there will be acquired in the study some knowledge useful in higher forms of bookkeeping.

2. The close relations of the various departments of mathematics to one another are apparent. So close are these relations in the early stages of algebra and geometry that the subjects may be said to be continuous rather than discrete. This is especially true in many kinds of practical work in which arithmetical processes are shortened by the use of algebraic symbols, and are practically applied in geometrical measurements.

The relation of the subjects of this group to other subjects of study is not so close as to make it necessary to bring them together constantly. Yet the facts of geography, history and elementary science may be sometimes employed in arithmetical operations, to the advantage of all the subjects involved.

3. While it is true, as has been said, that there should be a broad basis of subjects in the lower grades, there is a progressive order in the operations to be performed with numbers which should be prescribed in a course of studies. This order

has to do with the relative complexity of processes and also with the size of the numbers. In integral numbers, the work prescribed should be in successive steps, as follows: (*a*) from 1 to 10, (*b*) from 1 to 20, (*c*) from 1 to 100, (*d*) from 1 to 1,000, (*e*) from 1 to 1,000,000, (*f*) unlimited. In fractional numbers the fractional parts of numbers should first be taught almost from the beginning, and proceed in the third grade with fractional units, using in succession halves, fourths, eighths, thirds, sixths, twelfths, ninths, fifths, tenths, sevenths and elevenths. Decimals begun as early as the fourth grade should be taught by steps from tenths, hundredths and thousandths, which are the only decimals used for one year, to decimals of a lower denomination. Denominate numbers should be taught from the very beginning, the order of instruction being generally from measures most familiar to those that are less so.

The order of teaching numbers of all kinds should be first with objects and afterward without objects, and also first without figures and afterward with figures; the warning being expressed that too much dependence should not be had either by using the objects too long or by employing figures unnecessarily in the solution of problems.

The sequence of steps in algebra and geometry will be indicated later, when their limitations are treated.

4. The time allotted to arithmetic should be given mainly to what may be called the essentials of the subject, or to such work as will be found useful in everyday life. The following topics will indicate the degree of restriction that may be made: (1) Correctness and rapidity in adding, subtracting, multiplying and dividing. (2) Ability to work without the aid of figures in all operations, to 100 in whole numbers, to twelfths in common fractions and to thousandths in decimals. (3) Knowledge and skill in the use of such denominate numbers as are used ordinarily in buying and selling and in keeping accounts. (4) Knowledge of percentage and of the simple applications of percentage, such as are needed in ordinary business affairs. (5) Knowledge of geometrical measurements, so far as to perform problems involved in the ordinary affairs of life. It should be understood that, if more is done than is comprised in the above outline, it should not be at the expense of thor-

oughness in these subjects. It is believed that a large part of this work can be done in the first six grades. During the last two grades one or two lessons a week might be given to the more difficult problems involved.

The geometrical exercises of the grammar school should be limited to work in mensuration carried on in connection with arithmetic, and to exercises of a concrete and experimental kind. The following outline in mensuration, followed in the Springfield, Mass., course, sufficiently indicates the needed limitations of this part of the subject: —

A. Surfaces. — (1) Parts, (*a*) number of sides, (*b*) relative direction of sides (whether parallel, perpendicular, etc.), (*c*) angles. (2) Comparison with other surfaces as to (*a*), (*b*) and (*c*). (3) Length of perimeter or circumference. (4) Area.

B. Solids. — (1) Parts, (*a*) number of faces, (*b*) kinds of faces (plane or curved), (*c*) number of edges, (*d*) relative direction of faces (whether parallel, perpendicular, etc.). (2) Comparison with other solids as to (*a*), (*b*), (*c*) and (*d*). (3) Length of all the edges. (4) Surface area. (5) Volume or solid contents.

The limitations of work prescribed in experimental and constructive geometry should not be too strictly drawn. The better way will be to present an outline from which teachers may select work adapted to the ability of their pupils. Such an outline may include: (1) Definition of volume, surface, line, angle. (2) Definitions of various kinds of lines. (3) Definitions of various kinds of angles. (4) Division of line into any number of equal parts. (5) Construction of angles of various magnitudes. (6) Definitions of various kinds of triangles, parts, etc. (7) Problems relating to angles and sides of triangles. (8) Definitions of quadrilateral and kinds of quadrilaterals. (9) Problems relating to angles and sides of parallelograms. (10) Definitions of pentagon, hexagon, heptagon, etc. (11) Problems relating to the construction of polygons. (12) Problems relating to the division of polygons. (13) Problems relating to the construction of similar polygons. (14) Definitions of circle and parts of circle. (15) Problems relating to diameter, circumference, arc, chord, secant and tangent. (16)

Definitions of various kinds of volumes. (17) Problems in relation to the surfaces of volumes. (18) Problems in relation to the solid contents of volumes.

The problems indicated in the above outline may be either concrete and constructive, or demonstrative, depending upon the ability of a class or of the individual pupils of a class.

If the purpose of algebra in the grammar school is as indicated in a previous paragraph, its limitations might be somewhat as follows: (1) Algebraic notation. (2) Simple arithmetical problems, solved by algebra. (3) Addition, subtraction, multiplication and division. (4) Factoring of simple algebraic quantities. (5) Reduction of fractions. (6) Resolving of equations containing one and two unknown quantities. (7) Practical problems involving the foregoing.

Group III. — Elementary Science.

1. The immediate end of all the studies of this group is a knowledge of nature, including man and all that is below man. The term nature study in recent years has been made to cover the study of plants, animals and minerals, and the elementary work done in physics and chemistry. This group also includes physiology and hygiene and geography.

While it may be necessary in nature study to lead the pupils to learn through observation the facts of nature, they will learn them not for their own sake, nor mainly for the use they will make of them later in the study of science, but for the habits of observation which the lessons will help to form and for the abiding love of nature which they will help to arouse. These two ends, therefore, — the formation of habits of observation and the arousing of a love for nature, — will determine largely the character and extent of the study. It will include in their appropriate season the observation of minerals, plants and animals, and some of the more apparent physical forces. These observation lessons will fail to produce the desired ends if they stop with a knowledge merely of what is observed. The interpretation of phenomena is of more value than the mere observation of them as facts. The adaptation of parts of animals and plants to the uses they perform will early become an object of inquiry. It should be observed that, while a love for nature

is the primary end of nature study, it cannot be reached by simply talking about the objects observed. Such lessons may drift into mere sentimental reflections of little value. The facts must be learned not by reading or hearing, but by observing, and those facts should be reviewed frequently enough to be readily brought to mind.

The study of physiology and hygiene includes in its scope such knowledge of the anatomy of the body, and the uses of the various parts as will help the pupils to have respect for the body and to keep it in health and strength. The study should be especially helpful in guarding against the dangers of the use of stimulants and narcotics.

Through the study of geography the pupils acquire a knowledge of the earth as the home of man. There are two elements, therefore, of this branch of study; first, nature, in making the earth suitable for human habitation; and, second, the people, in making it a place in which all the activities of life are carried on. So far as possible, the pupils' knowledge of the earth should be interpreting knowledge, or knowledge by which they may understand the relations to human life of its various features, such as climate, surface, soil, etc.

2. The facts acquired in nature study are closely related to the primary facts of geography; indeed, many of the facts of nature study and geography are identical. The subjects of study in these two branches should therefore be arranged in the course with reference to purposes of correlation; and where it is possible the relations should be made to appear, as, for example, the effects of running water as a topic of nature study, and the study of relief forms as a topic of geography.

The relations also of one or both of these branches to arithmetic and history should be indicated. Probably no subjects in the course will be found to be more serviceable for composition and for drawing than these. If these relations are not indicated in the course, opportunity at least should be afforded for abundant practice in expressing in writing or in drawing the facts acquired.

In the lower grades resemblances and differences of the human structure and that of the lower animals should be objects of study, and in the higher grades the connection of

the facts of anatomy and physiology with those of chemistry and physics should be made to appear. In all grades the relation of parts of the body to uses and of uses to health and strength should be shown.

3. The allotment of work in nature study to be done in a given time, whether it be for a year or a day, should be determined by the pupils' natural powers, both of observation and of interpretation. With young children, little is gained by establishing a fixed order of presentation. In general, it may be said that the observations should be made first "in the large" and afterward more minutely; but, if children are interested in the parts of an object very early in their observations, attention should be given to them, especially if the interest centres in the uses of the parts. It is always a safe rule to teach those things which will best serve as interpreters of other things of value for the child to know. On the same principle, a clear and definite knowledge of home surroundings is necessary to a proper knowledge of distant features and conditions. A knowledge by observation of a hill range will be the means of interpreting the distant mountain range described in the book. As far as possible also the logical order should be followed in teaching the various topics. The situation and surface of a continent or country may determine to some extent the climate and rainfall, — a knowledge of which helps the pupils to infer what the productions and the occupations of the people are. In anatomy and physiology, the practice in the best schools of deferring the teaching of the internal structure of the body until the later years of the grammar school seems wise.

4. The two chief ends of nature study should be kept in mind in determining the amount to be done. To form good habits of observation and to acquire a love of nature, there should be no forcing of acquisition. In no study will it be found more necessary to be led by the natural aptitudes and desires of the children than in the study of plants, animals and minerals. While it may be well to set before the teachers a wide field for observation, it should be understood that such selection of the work assigned may be made as will be best suited to given conditions. Again, a broad range of topics will furnish the needed extra and optional work for some pupils already spoken of.

While it is true, as shown in a previous report,* that nearly all the best schools are giving attention to nature study or elementary science, there is a great difference in the amount and kind of work attempted. In some places, largely through the efforts of a superintendent of schools, especially interested in the subject, and a special teacher, the amount of ground covered is ten times that covered in other places. One superintendent reports recently that his schools even in the higher grades do but little more than give the pupils a knowledge of the common flowers and trees. But it should be remembered that the highest ends of the study do not depend upon the number of facts acquired. Here is an additional reason for making the requirements elastic.

Group IV. — History.

1. The place and scope of history as a branch of study have materially changed in recent years. Instead of occupying, as it once did, a small part of the last year or two of the grammar school course, it is now in the best schools begun in the first year and carried on throughout the course; and, instead of being a dry and profitless study of wars and dates, it has come to be regarded as a study both pleasureable and useful as a means of culture. According to this later view of the subject, its purpose from the first should be to inspire the pupils with high ideals of life, both as citizens and as members of society. Moreover, to lead the pupils to acquire a taste for history, the subject should be made interesting from the first. Myths, fairy stories and stories of semicivilized and colonial life should be told to and read by the children in the lower grades, to be continued each year by the reading of stories of biography and of American history in chronological order in the middle grades, and by the study of English and American history in the higher. All phases of social, civil and institutional life are to be presented to the children in forms suited to their interest and capacity. Thus we see that history, which is a record of the growth of a people from their earliest state to the present, includes biography and civil government as well as history proper.

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* Preliminary Report, pp. 7, 8.

2. As history teaches all sides of life, it stands in close relation to all the other studies of the school which are supposed to be a preparation for life: to arithmetic, in furnishing material for computations; to science, in showing the analogies of the evolution of the race and that of the individual; to geography, in the use of charts and maps, and in furnishing a basis of comparison whereby the present conditions of social and civil life are better known; to literature, in providing the basis of much of the finest forms of the oration, and the ballad, the drama and the epic; and to drawing and language, in awakening thoughts that deserve the pupils' best efforts of expression.

While most of these relations cannot appear in a course of studies, they must be considered in giving history its proper place. In literature especially should the close relation of history be recognized in the course of studies. There are phases of history that can best be known through literature, as there are forms of literature that can be fully interpreted only by a knowledge of history.

3. While the order of topics will depend somewhat upon the interest and capacity of the pupils, there is now a generally recognized order of presentation which should be embodied in a course. The first year or two may be given to the telling and reading of folk and fairy stories, myths and fables. These should be followed by reading stories of Indian and early settlement life, supplemented by biographical stories. As soon as the pupils are ready for it, and before the consecutive reading and study of American history are begun, attention should be given to interesting facts of local history, such as scenes of celebrated events, early settlers and well-known traditions. Consecutive topical study in connection with the reading of both American and English history should be prescribed for the last years of the course.

4. The limitations of subject-matter in history should be determined largely by the limitations of time and by the demands of other subjects. Not even a minimum of requirements should be prescribed, so far at least as such requirments are made a basis for marking or examinations. In this, as in no other subject, may the amount read and studied be adapted to the abilities of each individual pupil. If the work required to

be done be given out and recited by subjects or topics, each pupil may learn as much of each subject or topic as time and ability will permit. The course therefore should be so arranged as to permit the greatest degree of freedom in teaching the subject. If this is done, and examinations have their proper place, the teachers alone will be responsible if the pupils have not a loving interest in the subject, — not only while they are being taught, but also after they have left school.

Group V. — Miscellaneous.

1. In no branch of instruction has there been a greater change of place and scope than in drawing. Twenty-five years ago the number of public schools in which drawing was systematically taught was very small. Now the schools in which it is not taught are as rare to find as were the schools formerly where it was taught. At first the cultivation of the æsthetic sense was considered the only end to be sought, and it was in some way thought to be reached through drawing endless castles and rustic mills from flat copies. Later, the dominant purpose seemed to be to make the subject as practical as possible. This was carried out by the introduction of mechanical drawing, which had little relation to practical mechanics, and which was generally a laborious and tedious process to all concerned. Gradually these two ideas of the purpose of drawing as a branch of study have been supplemented by a third, which is that drawing is educational, and serves to train all the powers of the mind. As such the subject has its strongest claim for a place in the program. With this later idea of the function of drawing have come improved methods of teaching the subject, which serve to accomplish in good ways the ends that were formerly sought, — of æsthetics, by leading the pupils to draw and to use colors in imitation of nature and to appreciate by observation and study the most beautiful works of art; and of practicalness, by drawing free-hand from objects and by connecting closely the mechanical part of the subject with the work of manual training and with the every-day uses of life.

The growth of manual training as a branch of study in the schools has been somewhat like that of drawing. At first it was sought as an accomplishment, afterwards as a trade, now

as a means of mental discipline in furnishing a good foundation for practical life. Its claims to a place in the course of studies are: that (1) it teaches dexterity of hand; (2) it trains to habits of order and neatness; (3) it cultivates a sense of truth and right by demanding exactness of details; (4) it cultivates the will in its requirements of persistence until an object is completed; (5) it serves as a valuable aid to drawing and art studies; (6) it cultivates the ethical sense in enabling pupils to make useful objects; (7) it serves to offset the strain of intellectual work; and (8) it gives respect for manual labor.

The reasons for making singing a regular and systematic subject of instruction are that it affords rest and recreation, is a means of healthy exercise and cultivates the æsthetic, ethical and religious sense. Governed by these ends, the aim and scope of singing as a subject of instruction are clearly (1) to train the ear so as to appreciate and enjoy good music that is felt and (2) to understand and be able to sing at sight any ordinary secular or sacred piece of music.

2. The relation of drawing to manual training is so close that each may be said to be incomplete as a subject of instruction without the other. Both subjects also are closely connected with geometrical measurements. Drawing as a form of expression is closely related to every other subject of study, — to literature in illustrated sketches, to arithmetic in plans and working drawings, and to history and geography in diagrams and maps. In fact, it may be used as other forms of expression are used, and in some cases it may be used profitably when other means fail to express the thought or feeling.

In the lower grades the placing of singing in close relation to the reading and nature exercises and to the morning talk is made very effective. In the lower grades also singing in connection with some of the physical exercises is found beneficial. The use of singing tones has come to be recognized as a valuable means of securing good speaking tones, just as the phonic exercises in spoken tones have been found helpful in developing a good singing tone.

3. Skill in the subjects of this group, as in all technical subjects, will depend upon the fidelity with which the successive steps are taken. Nowhere is a close application of the maxims

"from the known to the related unknown" and "from the simple to the complex" more necessary than in connection with these subjects.

In the early stages of drawing as at present pursued there is a free expression of ideas through illustrative sketching without reference to principles. Attention is then given to form with special reference to correct proportion and outline, succeeded by exercises which give skill in rendering characteristic detail. Finally, there is sought to be secured a full and free expression of grace of form and harmony of color. In the mechanical side of drawing the successive steps are: first, exercises in precision, as paper folding and cutting; second, exercises in accurate measurement; third, accurate drawing of surfaces of given dimensions; fourth, conventional grouping of figures to express solidity; and, fifth, drawing to scale.

So far as the occupations of the kindergarten are educative, they are but the beginning of a series of manual exercises which should have no break throughout the elementary school course. In the earlier stages of the course, paper and cardboard should be extensively used, and always in close connection with drawing, for the purpose mainly of developing manual dexterity. In the later stages exercises to teach the use of tools should be given, and applications of what has been learned should be made in the manufacture of useful objects. In the last two years the course may, if thought desirable, be divided into two departments, — one for wood working and the other for sewing.

In singing, care should be observed that the steps of technique be taken in a natural order, and that the demands upon the children keep pace with their vocal powers and musical appreciation.

4. Within the scope and time already laid down, there need be given no limitations in drawing and manual training beyond what is necessary under a class system of instruction. Here, as in other branches, the minimum of what is expected to be done may be prescribed, together with extra or extended work to suit the circumstances.

Limitations in singing should be made in two directions: first, in respect to the time of learning the language of music; and, second, in respect to reach of tones. The child needs to

acquire a musical sense, — that is, a love for and appreciation of music, — before the language of music is learned. For this reason two or three years of careful practice in simple phonic exercises and rote songs should be spent before sign reading is begun. Such exercises are also needed for a proper development of strength and sweetness of tone. The danger of overstraining young children's voices is avoided by confining the exercises during the first year to the lower tones.

A Foreign Language.

It will be observed that no reference has been made to a foreign language in the preceding discussion, although that subject was recommended in previous reports.* In my second report I referred to the desirability of making it a part of the elementary course, but of offering it as an elective, "either by making it an extra study or by permitting it to be taken in place of some part of the work in English grammar." If it is taken as a separate and extra study, of course only those pupils should take it who have time and strength for it in addition to the required work of the school. If the new language is begun in the fifth or sixth year of the course, and if but two recitations a week are given to the study, little extra time need be given to it to acquire a fair degree of facility in reading and some knowledge of the grammar of the language.

The question of what foreign language shall be selected for study in the elementary schools has been discussed by educational leaders. No agreement has been reached, and perhaps none should be expected or desired. The preponderance of practice seems to be in favor of Latin. The arguments in favor of Latin are: (1) the desirability of giving pupils who do not go to the high school an opportunity of acquiring some knowledge of a language from which a large percentage of English words are derived; (2) the advantage of a good start in the study before the high school is reached, so that the increased requirements for entrance to college may be met easily in four years; and (3) the comparative ease of getting good teachers of the subject.

* See Preliminary Report, p. 45, and Second Report, p. 15.

Weighty as the above reasons are for choosing Latin as the foreign language to be offered in the grammar school, they seem to be outweighed by considerations in favor of a modern language, French or German. In the first place, in making the choice there should be primarily regarded the interests of those pupils who are not to continue their studies beyond the grammar school, on account of their limited means of culture. For such pupils a slight knowledge of French or German would be quite as disciplinary as Latin, and far more useful. In four years, with the limited time indicated, — two lessons a week, — a pupil should be able to read easy French or German at sight, and to talk somewhat in the language studied, — acquisitions which would be much more useful in a living than in a dead language. Again, if French is selected, the comparative ease of acquisition should be considered, not merely for the acquisition itself, but for the use that may be made of it in learning Latin. Many teachers advise the study of French two years before Latin is begun, for the help which it gives in the latter study. If French or German is taken as an optional study, there should be no more than two lessons a week, involving comparatively little of outside study. Easy reading should be put into the hands of the pupils after a few weeks of oral lessons. Attention should be confined to reading and talking during the first two years, or grades five and six. During the last two years these exercises should be supplemented by simple grammar lessons and writing, all pointing to the practical ends of correctness and facility in reading and talking.

Sub-primary Class.

Before giving an outline of prescribed work for the sub-primary class, I desire to give the reasons for recommending the formation of such a class, and to explain more fully than I have done the character of the exercises proposed for it.

In the first report of this series the following statements are made with reference to the need of a special class for children under six years of age: —

It is possible that the differences in this country in the earliest age of admission to the elementary schools and in the length of the course of such schools will disappear when the kindergarten becomes uni-

versally a part of the public school system. It may be fairly questioned, however, in any event, whether much of the formal intellectual work now carried on in many first-year primary classes should be demanded of children before the age of six. If, where children are permitted to enter school at five, a sub-primary course could be pursued, consisting largely of manual and observational work, advancement in subsequent work required would be likely to be quite as rapid as it is at present, where pupils are required to read and write much during the first year. In case there is a kindergarten course which children can begin at three or four years of age, the work of this sub-primary class could be supplementary to the work of the kindergarten and preparatory for the more formal work of the primary school. According to many of our best kindergartners and primary school teachers, this connection between the two schools is very much to be desired.*

Again, in a later part of the same report I said: —

In many schools where children are permitted to enter at five, as much is attempted and frequently as much is done in reading, writing and number as is done in schools whose minimum age of admission is six years. That this gain is only an apparent one is obvious to all who are able to compare results at the end of the course. The plan that I would recommend is, that in all places where children are permitted to enter school at five years of age, sub-primary classes be established, whose work shall consist largely of an extension or modification of the manual and observational work of the kindergarten, supplemented by some of the nature work and drawing now pursued in our best primary schools, and by a little reading, writing and number work.

If sub-primary classes are formed for children under six years of age, the nine years' course for children who enter school at five will be reduced to an eight years' primary and grammar school course, thus agreeing in age of admission, grades and age of graduation with our present eight years' course for children who are admitted at six years of age.†

In view of all that has been said by experienced teachers regarding the advisability of supplementing the work of the kindergarten by less formal work than is usually required in a primary school, it would seem unnecessary to plead for the introduction of the proposed class. Every primary school

* Preliminary Report, p. 6. † Preliminary Report, p. 38.

teacher realizes that the change is very great from the comparatively unrestrained freedom of the kindergarten, with its dozen or fifteen children, to the school where restrictions are made necessary by the large number of children and by the character of the work required. "Connecting classes" between the kindergarten and the primary school have been formed in several places, and they have invariably been found to be of great use in wisely leading the children into good school habits. Frequently the class exercises have been such as to permit pupils to omit a portion of the first-grade primary work.

But, if the sub-primary class is needed for those children who have had the benefits of the kindergarten, much more is such a class needed for children who have not had the advantage of the better training. The change from the home to the school is even greater than that from the kindergarten to the school, and therefore needs the bridge that the proposed class offers. Most people can recall the ordeal through which they passed during the first few weeks of school life. Perhaps the modern school has made the ordeal less trying than it used to be; but we can scarcely realize how great, under the best conditions, the gap is between the freedom of the home and the constraints of the schoolroom, where forty or fifty children have to be controlled by a single teacher.

To those parents who believe in the usefulness of the kindergarten and have not the opportunity to send their children to one, the proposition to establish sub-primary classes ought to be very welcome; for certainly more of the spirit of the kindergarten can be infused where there is large opportunity given for the gifts, occupations and games than in the ordinary primary school, where so much formal work is required. In places where the kindergarten is forbidden through ignorance of its benefits, or where it does not exist through lack of means, the establishment of the proposed grade will not be difficult to bring about. Indeed, in places where the age of admission is five years, it lies wholly in the hands of the school authorities to carry the plan into effect, inasmuch as it would simply take the place of the first-grade primary.

There is another, and, I believe even stronger, argument for the formation of the proposed class; and that is, the claim that

too much formal and too little observational work is now done in the first year of school. Children five years of age can no doubt do a prodigious amount of formal work. They *can* read through a dozen first readers, write a good hand, go to a hundred or a thousand in numbers, and perhaps read music in three keys, — all during the first year. But the question is, Ought they to do it? Ought they to do half or quarter as much? A fair answer to this question will, I am sure, lead us to revise the primary course, as now generally pursued, in the direction of the plan proposed.

The course to be pursued in the sub-primary class will depend somewhat upon the previous training of the children; but in any case the program will consist of an extension of the work of the kindergarten, especially along observational and manual training lines, with a comparatively small amount of reading, writing and arithmetic. The following general outline may suggest the character of the exercises most desired for the proposed class. The grouping and limitations of time are those given in the time program on a previous page of this report.

Groups I. and IV. — (Time spent daily in recitation and busy work for a single group of pupils, about 90 minutes.) Story telling, — selections from kindergarten stories, myths and fairy tales. Reading of words in sentences on blackboard and chart and on picture slips. Reading sentences from blackboard and chart. Phonic drill. Some analysis and synthesis by sounds. Writing on tracing slips, blackboard and paper. Large movements.

Group II. — (Time spent daily, about 15 minutes.) Fourth and fifth kindergarten gifts for counting and combining.

Group III. — (Time spent daily, about 45 minutes.) Recognition of common plants and trees, and their principal parts. Observation of and talks about familiar domestic animals and birds. Some resemblances and differences noted. Adaptation of parts to uses observed.

Group V., — including physical exercises, singing, games, drawing and hand work. (Time spent daily, about 90 minutes.) Construction and design, with tablets, sticks and blocks. Moulding in clay. Painting in color with brush. Paper fold-

ing and parquetry. Free illustrative sketching from memory and imagination. For physical exercises and singing, make selections from kindergarten songs and games.

Outline of a Course of Studies for Primary and Grammar Schools.

The following outline suggests a possible adjustment of primary and grammar school work to the conditions indicated in this and in previous reports. While it is probably insufficient to meet fully the needs of any system of schools, it is hoped that it will fulfil in some degree the requirements of a general course, upon which more detailed courses may be constructed suited to various localities and conditions. The absence of repeated directions to review previous work and to follow proper lines of teaching indicates the presumption of professional ability on the part of teachers. A course of studies is not a manual of methods and theories of teaching, however important such a statement of methods and theories may be in some places. Happy is it for those schools whose courses of studies may presuppose the employment of teachers whose knowledge of the principles of teaching is undoubted, and whose judgment is fully trusted in the selection of materials within the bounds of an outline not greatly extended.

It should be understood that this course is intended for pupils who enter school at six years of age, and who come either from the kindergarten or sub-primary class. Some pupils who have taken the course outlined for the sub-primary class may be able to take the work outlined for the first grade in less than a year.

The figures in the left-hand column indicate the year and quarter during which the work in parallel columns is supposed to be done. For example, 2^3 means the third quarter of the second year. The figures in decimals above each year's outline of work denote the approximate percentage of recitation time which a pupil or a group of pupils should give to the allotted group of subjects. These figures are taken from Table XV of the Second Report.

Grade and Quarter.	Group I. (.42) (*a*) Reading. (*b*) Writing. (*c*) Composition and Spelling. (*d*) Memory Work. (*e*) Grammar.	Group II. (.12) (*a*) Arithmetic. (*b*) Form and Geometrical Exercises. (*c*) Algebra. (*d*) Book-keeping.	Group III. (.12) (*a*) Nature Study and Elementary Science. (*b*) Geography. (*c*) Physiology and Hygiene. (*d*) Information Reading connected with the Lessons of this Group.	Group IV. (.10) (*a*) History and Biography. (*b*) Civil Government.	Group V. (.24) (*a*) Drawing and Art. (*b*) Manual Training. (*c*) Singing.
1^1	(*a*) Words in sentences from blackboard. (*b*) Copying words from blackboard and slips. (*c*) Telling of stories told by teacher. (*d*) Learning and reciting of short pieces — a minimum average of two lines a day.	(*a*) Combinations of numbers to ten, using blocks. All oral work. Original stories. Use terms one half and one fourth. (*b*) Comparison of blocks in size.	(*a*) Recognition of common plants and trees. Teach principal parts. (*b*) Uses of plants and their parts to man. (*c*) Parts of body, — movement, use and care of each part. (*d*) Suitable stories and selections (see list).	(*a*) Telling of carefully selected fairy stories, suitable to the capacity of the children and to the season. Select also with reference to what is done in nature study and reading (see list of books and selections).	(*a*) Free illustrative sketching from memory and imagination. The solar spectrum for color. (*b*) Paper folding. (*c*) Breathing and phonic exercises. Rote songs.
1^2	(*a*) Sentences from chart or reader. Analysis and synthesis of words by sound. (*b*) Copying words and sentences from blackboard and slips. Copying single letters. (*c*) Oral reproduction of stories told or read. Copying words and sentences. (*d*) Learning and reciting of short pieces.	(*a*) Combinations of numbers to ten with and without objects. Use of figures in examples. Teach pint, quart. Original stories. (*b*) Area of surface of inch cube. Length of edges.	(*a*) Observe flesh-eating animals (dog, cat) for habits and adaptation of parts to habits; pictures of unfamiliar animals for comparison. (*b*) Uses of animals and their parts to man. Animal productions. (*c*) Compare parts of body with bodies of animals studied. Compare uses. (*d*) Suitable selections (see list).	(*a*) Stories prescribed for first quarter continued.	(*a*) Study of pictures for story. The six spectrum colors. (*b*) Paper folding for accuracy. (*c*) Breathing and phonic exercises continued. Dictation and memory exercises. Tone building on music ladder (not above fifth tone). Rote songs.

1^3	(*a*) Sentences from first part of two or more first readers. Analysis and synthesis of words continued. (*b*) Copying words and sentences continued. Correct forms of single letters taught. (*c*) Oral reproduction of stories told or read. (*d*) Learning and reciting of short pieces. Review last half year's work frequently.	(*a*) Combinations of numbers to twenty with objects. Teach dozen, quart, gallon, pint, gill, dime, foot, inch. Fractional parts of numbers. Examples and problems. Original problems. (*b*) Comparison of surfaces of inch cube and other surfaces.	(*a*) Recognition of common rocks. Buds observed. (*b*) Uses of rocks to man. Mineral productions. (*c*) Review and continue previous lessons. Parts of head. Care of teeth, hair, ears, eyes, face. (*d*) Suitable selections (see list).	(*a*) Stories prescribed for first quarter continued.	(*a*) Blackboard drawing, free movement. Straight lines and curves. Six standard colors. (*b*) Drawing lines with ruler from point to point. (*c*) As in second quarter.
1^4	(*a*) Reading easier pieces of four or more first readers. Analysis and synthesis of words by sound and by letter. (*b*) Copying sentences from models and writing from dictation. Writing of single letters continued. (*c*) Copying sentences continued. Dictation of short sentences. Teach pupils to write their name; school; town; father's (Mr.) name; mother's (Mrs.) name; teacher's name. Period and question mark. Oral and written reproduction of what has been read or told. (*d*) Learning and reciting of short pieces.	(*a*) Same as last quarter with and without objects. Review and apply weights and measurements in practical problems. (*b*) Comparison of length of edges of inch cube with edges of other blocks.	(*a*) Recognition of common plants and trees. Observe and name qualities as color, size, form, number, surface. (*b*) Uses of plants and trees and their parts. Vegetable productions. (*c*) Parts of hands and feet. Uses. Care of nails. (*d*) Suitable selections (see list).	(*a*) Stories prescribed for first quarter continued.	(*a*) Drawing from nature simple grasses and flowers, using colored crayons. (*b*) Cutting to a line with scissors. (*c*) As in second quarter.

	Group I. (.42)	Group II. (.12)	Group III. (.12)	Group IV. (.10)	Group V. (.24)
2^1	(*a*) Selections from several first readers. Analysis and synthesis of words continued. (*b*) Copying and writing from dictation continued. Teach correct forms of single letters. (*c*) Oral and written compositions (reproductions, etc.), daily. Common abbreviations. Use of period and interrogation mark. Use of capital at beginning of sentence. Dictation daily for spelling, etc. (*d*) Memory work reviewed and continued (see list).	(*a*) Numbers from one to one hundred:— (1) Combinations of tens and of tens with numbers less than ten. (2) All combinations to thirty; no added or subtracted number or multiplier or divisor greater than ten. (3) Application to familiar weights and measures. (4) Fractional parts of numbers. (5) Original problems. (*b*) Areas of inch cube and of two-inch cube.	(*a*) Extend observations of first grade in recognizing common plants and trees. (*b*) Useful vegetable productions. Location of plants observed. Position and direction (general). (*c*) The skin,— use, care and cleanliness. Use of the senses. (*d*) Suitable selections (see list).	(*a*) Telling and reading of fairy stories and fables. Select with reference to capacity of children, to the season and to what is done in nature study and reading (see list of books and selections).	(*a*) Illustrative drawing. Memory and imagination, with help of live objects (birds and animals). Six standard colors. (*b*) Paper folding and cutting. (*c*) As in first year.
2^2	(*a*) Difficult portions of several first readers. Phonic drill. (*b*) Copying and writing from dictation continued. Practice upon forms of single letters if needed. (*c*) Oral and written compositions continued. Common abbreviations such as used in arithmetic. Dictation for correct forms of words, spelling, etc. (*d*) Memory work reviewed and continued (see list).	(*a*) Numbers from one to one hundred:— (1) Combinations of tens and of tens with smaller numbers. (2) All combinations to fifty; no added or subtracted number or multiplier or divisor greater than ten. (3) Application to familiar weights and measures. (4) Fractional parts of numbers. (5) Original problems. (*b*) Perimeters of inch cube and of two inch cube.	(*a*) Observe grass-eating animals (cow, horse, sheep) for habits and adaptation of parts to habits. Use pictures of unfamiliar animals of same class for comparison. (*b*) Useful animal productions. Position, direction, distance. Familiar bodies of land and water. (*c*) Use of the bones of the body. How injured. Effect of tobacco and alcohol. (*d*) Suitable selections (see list).	(*a*) Stories prescribed for first quarter continued.	(*a*) Study of pictures for story. Use of water colors. (*b*) Paper folding and cutting. (*c*) As in first year.

2^3	(*a*) Easy portions of several second readers. Daily phonic drill. Easy selections (see list). (*b*) Copying and writing from dictation with pen and ink. Practice upon single letters if needed. (*c*) Daily composition and dictation exercises. Teach use of capitals. Review in sentences common difficult words. (*d*) Memory work reviewed and continued (see list).	(*a*) Numbers from one to one hundred:— (1) All combinations; no added or subtracted number or multiplier or divisor greater than ten. (2) Application to familiar weights and measures. (3) Fractional parts of numbers. (4) Original problems. (*b*) Comparison in size of prisms each of whose bases is one inch square.	(*a*) History of plant life from seed to seed. Observe bean and pea. Plant several kinds of seed for observation and comparison. (*b*) Plants and parts used for food and clothing. Use of seeds to man. Forms of water. Winds, direction and distance. (*c*) Simple lessons on eating, drinking, breathing and sleeping. Healthful foods and drinks. (*d*) Suitable selections (see list).	(*a*) Stories prescribed for first quarter continued.	(*a*) Blackboard drawing: related curves and straight lines. Flat washes of tints. (*b*) Ruling lines of definite lengths and divisions. (*c*) As in first year.
2^4	(*a*) Several second readers and selections (see list). Daily phonic drill. (*b*) Copying and writing from dictation continued. Practice upon forms of single letters if needed. (*c*) Daily composition and dictation exercises. Ordinary use of capitals, common abbreviations, use of period, interrogation and exclamation marks. Spelling of common words. (*d*) Memory work reviewed and continued (see list).	(*a*) Numbers from one to one hundred:— (1) All combinations with and without figures. (2) Application to familiar weights and measures. (3) Fractional parts of numbers. (4) Original problems. (*b*) Comparison of surfaces of prisms.	(*a*) Extend observation in recognizing and naming common plants and trees of neighborhood and cultivated plants. (*b*) Direction and distance applied to familiar bodies of land and water. Productions—animal and vegetable—of the town. (*c*) Value of sleep. Ventilation. Colds. Draughts. Shape, use and working of muscles. Effects of exercise. Best kinds of exercise. Best time to exercise. (*d*) Suitable selections (see list).	(*a*) Stories prescribed for first quarter continued.	(*a*) Drawing from nature simple grasses and flowers, using water colors. (*b*) Cutting to a line with scissors. (*c*) As in first year.

	Group I. (.38)	Group II. (.15)	Group III. (.15)	Group IV. (.10)	Group V. (.22)
3^1	(*a*) Difficult portions of several second readers and other books of corresponding grade (see list). (*b*) Copying and writing from dictation continued. (*c*) Daily composition and dictation exercises. Attention given to abbreviations, spelling, punctuation and use of capitals. Also to correct words and correct forms of words. (*d*) Memory work reviewed and continued (see list).	(*a*) Numbers to one thousand. (1) Addition and subtraction with and without objects. (2) Continue applications to familiar weights and measures and use of fractional parts of numbers. (3) Original problems. (*b*) Comparison of surfaces of cubes and prisms with surface of inch cube.	(*a*) Extend observation in recognizing and naming common plants and trees grouping according to habitat. (*b*) Cardinal and semi-cardinal points. Distance continued. Details of hills, plains, valleys. (*c*) Flesh making and heat giving foods. Salty foods. Wholesome and unwholesome drinks. (*d*) Suitable selections (see list).	(*a*) (1) Classical myths and stories (see list). (2) Stories of ancient world, Egypt, Assyria, Babylonia, Judea. Bible stories (see list of books and selections).	(*a*) Free drawing of plants and other common objects. Hues of color by means of colored papers. (*b*) Paper folding and cutting. (*c*) Breathing, phonic, dictation and memory exercises continued. Tone building on music ladder. All tones of scale. Rote songs.
3^2	(*a*) Books and selections of corresponding grade to third reader (see list). (*b*) Copying and writing from dictation continued. (*c*) Daily composition and dictation exercises, giving attention to spelling, punctuation, use of capitals, correct words and correct forms of words. (*d*) Memory work reviewed and continued (see list).	(*a*) Numbers to one thousand. (1) Multiplication and division with and without objects. (2) Continue applications to familiar weights and measures and fractional parts of numbers. (3) Original problems. (*b*) Comparison of perimeter of known surfaces with perimeter of square inch.	(*a*) Local minerals and rocks for recognition and properties in color, form, hardness. Qualities of air and water. (*b*) Plans read showing directions and distances of familiar objects. Details of brooks and ponds. Weather record. (*c*) Simple lessons on digestion and circulation of blood. Effects of tobacco and alcohol. (*d*) Suitable selections (see list).	(*a*) Stories prescribed for first quarter continued.	(*a*) Study of pictures for story. Hues of color in washes. (*b*) Paper folding and cutting. (*c*) As in first quarter.

3^3	(*a*) Books and selections of corresponding grade to third reader (see list). (*b*) Copying and writing from dictation. (*c*) Daily composition and dictation exercises. Attention given to spelling, punctuation, use of capitals, choice of words and forms of words; also to clearness and originality. (*d*) Memory work reviewed and continued.	(*a*) Numbers to one thousand. (1) All operations. (2) Applications in common weights and measures. (3) Original problems. (*b*) Measurements of short and familiar distances and practical applications.	(*a*) Study birds for habits and adaptation of parts to habits. Comparative study of feathers. Changing length of day and night and varying temperature. (*b*) Drawing of plans to scale. Erosive action of water. Soil formation. Land and water surface of neighborhood. Weather record. (*c*) Simple lessons concerning respiration and ventilation. The skin,—sweat tubes and bathing. (*d*) Suitable selections (see list).	(*a*) Stories prescribed for first quarter continued.	(*a*) Illustrative drawing. Drawing of animals in ink, silhouette, or color. Harmonious arrangement of one color with black, white or gray. (*b*) Drawing and cutting figures of definite dimensions. (*c*) As in first quarter.
3^4	(*a*) Books and selections of corresponding grade to third reader (see list). (*b*) Copying and writing from dictation. (*c*) Daily composition and dictation exercises. Attention given to correctness of spelling, punctuation, use of capitals, choice of words and forms of words; also to clearness and originality. (*d*) Memory work reviewed and continued.	(*a*) Numbers to one thousand. (1) All operations. (2) Applications in common weights and measures. (3) Original problems. (*b*) Measurements of familiar surfaces and practical applications.	(*a*) Changes in plant and animal life in spring. Grouping of plants according to habitat; time of appearance, etc. Life history of corn compared with bean and pea. (*b*) Surface, soil, climate and productions of town. Plan of neighborhood drawn to scale. Map of town. (*c*) Care of teeth, eyes, throat, ears, hair, finger nails. Simple lessons on eating, sleeping, exercising, etc (*d*) Suitable selections (see list).	(*a*) Stories prescribed for first quarter continued.	(*a*) Drawing of grasses, leaves and flowers from nature in color. Use of floral elements in borders or surface patterns in color. (*b*) Cutting units of design. (*c*) As in first quarter.

	Group I. (.32)	Group II. (.16)	Group III. (.20)	Group IV. (.12)	Group V. (.20)
4^1	(*a*) Literature suited to the interest and capacity of pupils (see list). (*b*) Instruction to pupils who do not form letters well. (*c*) Daily composition and dictation exercises giving attention to correctness of spelling, punctuation, use of capitals, choice and forms of words, — also to clearness, conciseness and comprehensiveness of expression (*d*) Memory work reviewed and continued (see list).	(*a*) (1) Integers to one million. Addition and subtraction. (2) Fractions: halfs, fourths and eighths. (3) Simple business transactions. (4) Common weights and measures. (*b*) Angles and areas of rectangles	(*a*) Plant and its parts: parts of leaves and flowers; change of flower to fruit and seed. (*b*) Lessons on natural divisions of land and water. Map reading of County and State. (*c*) The bones as a framework and protection; number, names and location. (*d*) Suitable selections (see list).	(*a*) (1) Stories from the Iliad. (2) Reading of stories connected with pioneer life, especially of the part of country in which the children live.	(*a*) Freehand drawing in any appropriate medium of plants, fruits and other objects (spherical). Analysis of leaves and flowers for color schemes. (*b*) Accurate drawings with ruler involving ½", ¼", ⅛", and cutting in cardboard. (*c*) Breathing, phonic dictation and memory exercises continued. Staff notation, — study of notes, rests, etc., and accent. Rote songs.
4^2	(*a*) Literature suited to the interest and capacity of pupils (see list). (*b*) Instruction to pupils who need it. (*c*) As in first quarter.	(*a*) (1) Integers to one million. Multiplication and division. (2) Fractions: thirds, sixths, twelfths. (3) Simple business transactions. (4) Common weights and measures. (*b*) Areas of parallelograms.	(*a*) Animals: recognition, habits and adaptation of parts. Cycle of animal life as shown in frog; grouping of known animals. (*b*) Teach with globe general features of land and water surface; also general facts of climate productions, people, countries, cities. (*c*) Composition and structure of the bones.	(*a*) (1) Stories from the Odyssey. (2) Stories connected with famous persons, Marco Polo, Columbus, Magellan, Balboa, Drake, La Salle, De Soto, Raleigh.	(*a*) Study of famous painting for centre of interest and emphasis. Tints and shades in water color. (*b*) Simple constructive design, — card picture frames and the like, of good proportions. (*c*) As in first quarter.

4^3	(*a*) As in first quarter. (*b*) As in first quarter. (*c*) As in first quarter. (*d*) As in first quarter.	(*a*) (1) Integers unlimited. (2) Fractions to twelfths, decimals, tenths and hundredths. (3) Simple business transactions. (4) Common weights and measures. (*b*) Areas of triangles.	(*a*) Teach pebbles, sand and clay with reference to life history of rocks. Observe crystals and show how they may be found. Effect of heat on water and air. (*b*) North America by topics. Special lessons on climate. (*c*) Joints, ligaments and cartilages. (*d*) Suitable selections (see list).	(*a*) (1) Stories connected with early local history. (2) Stories of famous persons, John Smith, Henry Hudson, Stuyvesant, Myles Standish, Massasoit, Roger Williams, Governor Bradford, King Philip.	(*a*) Drawings in mass of animals and children in interesting attitudes. Illustrative drawing in other studies. Study of tints and shades of one color in design. (*b*) Accurate subdivisions of fields for design. (*c*) As in first quarter.
4^4	(*a*) As in first quarter. (*b*) As in first quarter. (*c*) As in first quarter. (*d*) As in first quarter.	(*a*) (1) Integers unlimited. (2) Common fractions to twelfths; decimal fractions to thousandths. (3) Applications in simple business transactions and in common weights and measures. (*b*) Practical applications in finding areas.	(*a*) Recognition of plants continued. Changes in nature and their relation to plants, animals and man. Movement and changes in moon. Observe star groups. (*b*) United States as a whole and in sections, by topics. Teach by topics State and town. (*c*) Growth and health of the bones. Effects of exercise, rest, posture, clothing, food and alcoholic stimulants. (*d*) Suitable selections (see list).	(*a*) (1) Stories connected with early local history. (2) Stories of famous persons, Franklin, Washington, Lafayette, Fulton, Morse, Lincoln, Grant.	(*a*) Drawings in any appropriate medium of leaves and flowers from nature. Arrangement in spaces. Application in border and surface patterns in color. (*b*) Cutting of geometric forms in thin wood. (*c*) As in first quarter. Two part exercises and songs.

	Group I. (.32)	Group II. (.16)	Group III. (.20)	Group IV. (.12)	Group V. (.20)
5^1	(*a*) As in fourth grade. (*b*) As in fourth grade. (*c*) As in fourth grade. (*d*) As in fourth grade.	(*a*) (1) Addition and subtraction of common fractions. (2) Applications with common weights and measures. (*b*) Kinds of polygons.	(*a*) Plants and parts continued, emphasizing roots and stems. Form, leaves and bark of trees; grouping of plants. (*b*) The countries of North America, other than the United States, by topics. Special lessons on mountain ranges and slopes. (*c*) The structure, kinds, action and uses of the muscles. (*d*) Suitable selections (see list).	(*a*) (1) Consecutive reading relating to explorations and discoveries in North America. (2) Stories relating to Indian life in North America.	(*a*) Freehand drawing in any medium of plants, fruits and simple spherical and cylindrical objects. Analysis of leaves and flowers for color schemes. (*b*) Accurate drawings of polygons with compasses and ruler. (*c*) Previous work continued. Exercises in key of C, G and F.
5^2	(*a*) As in fourth grade. (*b*) As in fourth grade. (*c*) As in fourth grade. (*d*) As in fourth grade.	(*a*) (1) Multiplication and division of common fractions. (2) Applications with common weights and measures. (*b*) Areas of polygons.	(*a*) Study of rock forming minerals, quartz, mica, feldspar, etc. Building stones. Motion and pressure in solids, water and air. (*b* Continent of South America by topics. Special lessons on drainage. (*c*) Development of the muscles. Effects of exercise, rest, narcotics and alcoholic stimulants. (*d*) Suitable selections (see list).	(*a*) (1) Consecutive reading relating to explorations and discoveries in South America. (2) Stories connected with life of the Aztecs and Incas.	(*a*) Study of famous paintings for centre of interest and emphasis. Subordination accessories. Hues in water color. (*b*) Modifications of polygons for objects of beautiful line, silk reel, badge, etc. Construction in appropriate material. (*c*) As in first quarter.

5^3	(*a*) As in fourth grade. (*b*) As in fourth grade. (*c*) As in fourth grade. (*d*) As in fourth grade.	(*a*) (1) Decimal fractions: all operations unlimited. (2) Applications in business transactions. (*b*) Areas of surfaces of cube and prism.	(*a*) Minerals continued. Continue study of changes in heat on water and air. Apply to phenomena of seasons. Changes in position of sun. (*b*) Continent of Europe topically. Special lessons on soil. (*c*) Structure of the skin, hair and nails; the perspiratory and sebaceous glands. (*d*) Suitable selections (see list).	(*a*) (1) Consecutive reading of history relating to the early colonies of North America. (2) Stories connected with the early history of continental Europe.	(*a*) Drawings in mass of animals and children in interesting attitudes. Illustrative drawing in other studies. Study of analagous coloring; related hues in design. (*b*) Accurate subdivision of fields of designs into polygons. (*c*) As in first quarter.
5^4	(*a*) As in fourth grade. (*b*) As in fourth grade. (*c*) As in fourth grade. (*d*) As in fourth grade.	(*a*) (1) Decimal fractions: all operations, unlimited. (2) Applications in denominate numbers and business transactions. (*b*) Area of surface of square pyramid.	(*a*) Insects: study of one for type of insect life,—grasshopper or butterfly; adaptation of parts to habits; metamorphosis. Relation of known insects to man as useful or injurious. (*b*) British Isles and dependencies. Special lessons on climate and productions. (*c*) Functions of the skin and their relation to the health of the body. Effects of bathing and clothing, stimulants and narcotics. (*d*) Suitable selections (see list).	(*a*) (1) Consecutive reading of history relating to the Indian wars in North America. (2) Stories connected with the early history of England.	(*a*) Drawings of plants and insects from nature in any appropriate medium. Arrangement in spaces, applications in borders, surface patterns and rosettes in color. (*b*) Development of surface of pyramids in cardboard. Applications in thin wood. (*c*) As in first quarter.

	Group I. (.32)	Group II. (.16)	Group III. (.20)	Group IV. (.12)	Group V. (.20)
6^1	(*a*) As in fourth grade. (*c*) As in fourth grade. (*d*) As in fourth grade.	(*a*) (1) Metric system of weights and measures. (2) Percentage and simple applications. (*b*) Solid contents of cube and of square prism.	(*a*) Study of trees continued. Fruit and dispersion of seeds. Grouping of plants continued. (*b*) Review United States. Teach Russia, Germany and France, by topics. Special lessons on motions of the earth and their effects. (*c*) The bones, muscles and skin, — structure and function. (*d*) Suitable selections (see list).	(*a*) (1) Consecutive reading of history relating to the Revolutionary war and events which led to it. (2) Stories connected with the history of Russia, Germany and France.	(*a*) Drawing in any medium of plants and common objects. Analysis of leaves and flowers for color schemes. (*b*) Working drawings of simple rectangular objects. (*c*) Previous exercises continued. Work in chromatic intervals. Exercises in key of D and B flat.
6^2	(*a*) As in fourth grade. (*c*) As in fourth grade. (*d*) As in fourth grade.	(*a*) (1) Practical problems in metric system and denominate numbers. (2) Simple applications of percentage. (*b*) Solid contents of rectangular prism.	(*a*) Study of common metals and their ores, — iron, copper, etc. Grouping of birds as to habits, — perchers, scratchers, swimmers. (*b*) Review state, county and town. Teach countries of Europe not before taught. Special lessons on latitude and longitude. (*c*) The growth, waste and renewal of the body. The organs and processes of digestion. (*d*) Suitable selections (see list).	(*a*) (1) Consecutive reading of United States history relating to the period between 1783-1815. (2) Stories connected with the history of Spain, Greece and Italy.	(*a*) Study of famous paintings for centre of interest and emphasis, grouping of accessories for leading lines. (*b*) Design and manufacture of simple objects in paper, card or wood; pin box, candy box, etc. (*c*) As in first quarter.

6^3	(*a*) As in fourth grade. (*c*) As in fourth grade. (*d*) As in fourth grade.	(*a*) (1) Practical problems in metric system and denominate numbers. (2) Simple applications of percentage. (*b*) Measurements of circle.	(*a*) Study the combined effects of heat and gravity on water and air. Grouping of birds continued. Compare parts with corresponding parts of vertebrates. (*b*) Continent of Asia, Japan, China, Philippine Islands. Special lessons on winds and ocean currents. (*c*) The composition and uses of the blood. The organs of circulation and their functions. (*d*) Suitable selections (see list).	(*a*) (1) Consecutive reading of United States history during the period from 1815 to 1860. (2) Stories connected with Japanese, Chinese and Phillipine islands.	(*a*) Drawings in mass of animals and children in interesting attitudes. Illustrative drawing in other studies. Study of analogous coloring, related lines, in design. (*b*) Accurate geometric basis for designs. (*c*) As in first quarter.
6^4	(*a*) As in fourth grade. (*c*) As in fourth grade. (*d*) As in fourth grade.	(*a*) (1) Practical problems in denominate numbers. (2) Business transactions and accounts. (*b*) Area of surfaces of prisms and cylinders.	(*a*) Study absorption, transfer and radiation of heat by solids and liquids. Clusters of flowers in maple, elm, horse chestnut, oaks, birches, tree fruits. (*b*) Continent of Africa, Australasia. Special lessons on climate and rainfall. (*c*) The relation of the blood to health. Effects of narcotics and alcoholic stimulants upon organs and processes of digestion and circulation. (*d*) Suitable selections (see list).	(*a*) (1) Consecutive reading of United States history during and since the civil war. (2) Stories connected with colonizations in Africa and the islands of Australasia.	(*a*) Plant forms in appropriate medium. Arrangements in spaces of different shapes. Applications in borders, surfaces, rosettes, etc., in color. (*b*) Development of surface of prism and cylinders in card board. Applications in appropriate material. (*c*) As in first quarter.

	Group I. (.33)	Group II. (.16)	Group III. (.16)	Group IV. (.15)	Group V. (.20)
7^1	(*a*) As in fourth grade. (*c*) As in fourth grade. (*d*) As in fourth grade. (*e*) The sentence. Kinds of sentences. Subject and predicate.	(*a*) Insurance, commission, profit and loss, taxes. (*b*) Measurements and problems relating to angles.	(*a*) Study composite family, or grasses and grains. (*b*) General review of North America: United States, West Indies, South America. Special lessons in mathematical geography. (*c*) The composition and purity of air. Organs of respiration and their functions. (*d*) Suitable selections (see list).	(*a*) (1) Topical study: Ancient America; Northmen; voyages and discoveries of Columbus, the Cabots and Vespucius. (2) Reading from early History of England. (*b*) Local town and county governments. Officials: by whom chosen; duties, etc.	(*a*) Drawings in any medium of plants and common objects. Illustrative drawing in other studies. Analysis of beautifully colored natural objects for color schemes. (*b*) Working drawings of common objects to scale. (*c*) Previous work continued. Exercises and songs in all keys.
7^2	(*a*) As in fourth grade. (*c*) As in fourth grade. (*d*) As in fourth grade. (*e*) Parts of speech. Phrases and clauses.	(*a*) Duties, interest. (*b*) Areas of surfaces of pyramid and cone.	(*a*) Study of coal series. Combustion: study of candle flame products. (*b*) General review of countries of Europe. Special lessons on commerce. (*c*) Structure of the lungs. Effects of respiration upon the air and blood. How heat of body is generated. (*d*) Suitable selections (see list).	(*a*) (1) Topical study: Colonization of North America by Spaniards and French, with review. (2) Reading from History of Spain and France. (*b*) State government. Branches: function of each; officials, — by whom chosen; terms; duties.	(*a*) Study of famous paintings for composition of line and of light and shade or mass. (*b*) Design and manufacture of simple objects in paper, card or wood, — match safe, tooth pick holder, bracket, etc. (*c*) As in first quarter.

7[3]	(*a*) As in fourth grade. (*c*) As in fourth grade. (*d*) As in fourth grade. (*e*) Nouns and pronouns,—kinds and forms. Rules of syntax. Analysis of sentences.	(*a*) Banking: stocks and bonds. (*b*) Solid contents of cylinder, pyramid and cone.	(*a*) Study typical marine animals,—starfish, oyster or clam, lobster or crab. Compare with vertebrates (fish). Composition of air, water and various foods. (*b*) General review of Asia and Africa. Special lessons upon colonies and colonization. (*c*) The relation of respiration to health with special reference to ventilation, disinfectants, exercise and clothing. (*d*) Suitable selections (see list).	(*a*) (1) Topical study of colonization in America by English. (2) Reading from history of England to 1760. (*b*) Topical study of state government continued.	(*a*) Drawings in any medium of children in interesting attitudes, and of details of interior of room. Free-hand perspective. Story of Christian architecture and ornament. (*b*) Use of common tools,—try-square, gauge, etc. (*c*) As in first quarter.
7[4]	(*a*) As in fourth grade. (*c*) As in fourth grade. (*d*) As in fourth grade. (*e*) Verbs,—kinds and form. Rules of syntax. Analysis of sentences.	(*a*) (1) Business transactions and accounts. (2) Ratio and proportion. (*b*) Solid contents of frustum of pyramid and cone, and of sphere.	(*a*) Study rose family. Some principles of acoustics. (*b*) General review of Australasia. Special lessons upon productions and government. (*c*) The vocal organs and their functions. Effects of stimulants and narcotics. (*d*) Suitable selections (see list).	(*a*) (1) Topical study of United States history, from 1763 to 1783. (2) Reading English history to 1785. (*b*) Topical study of United States government. Branches: function of each; officials,—qualifications, etc.	(*a*) Adaptation of natural forms to purposes of decorative design. Applications to initials, head and tail pieces, etc., in black and white and color. Complementary colors in design. (*b*) Working of wood in three dimensions. (*c*) As in first quarter.

	Group I. (.33)	Group II. (.20)	Group III. (.12)	Group IV. (.15)	Group V. (.20)
8^1	(*a*) As in fourth grade. (*c*) As in fourth grade. (*d*) As in fourth grade. (*e*) Kinds, forms and uses of adjectives, adverbs, prepositions and conjunctions. Analysis of sentences.	(*a*) Definitions, rules and formulas. Miscellaneous exercises. (*b*) Definitions, problems and theorems relating to angles and lines. (*c*) Algebraic, notation and simple problems. Addition and subtraction.	(*a*) Poisonous plants and trees. (*b*) Comparative study of climate and climatic influences. (*c*) The nervous system. Organs and functions. (*d*) Suitable selections (see list).	(*a*) (1) Topical study of United States history from 1783 to 1815. (2) Reading of English history to 1815; also of French Revolution. (*b*) Topical study of United States government continued. Election and appointment of officials. Terms of office. Duties. Civil service.	(*a*) Drawings in any medium of common objects. Illustrative drawings in other studies. Analysis of beautifully colored natural objects for color schemes. (*b*) Working drawings of common objects to scale. (*c*) Previous work continued. Three part exercises and songs. Introduction of minor scales.
8^2	(*a*) As in fourth grade. (*c*) As in fourth grade. (*d*) As in fourth grade. (*e*) Rules of syntax and applications. Analysis of sentences.	(*a*) Definitions, rules and formulas. Miscellaneous exercises. (*b*) Definitions, problems and theorems relating to angles, sides and areas of triangles and parallelograms. (*c*) Multiplication and division. Factoring.	(*a*) Lessons on cohesion gravity and heat. (*b*) Comparative study of vegetation in different latitudes. (*c*) Relation of the nervous system to health, with reference to exercise, various kinds of work, rest, food and drink. (*d*) Suitable selections (see list).	(*a*) (1) Topical study of United States history from 1815 to present time. (2) Reading of English history to present time. (*b*) Principles of local government. Basis. Duties of citizens. Local questions discussed.	(*a*) Study of famous paintings for composition of line and of mass. (*b*) Design and manufacture of simple objects in appropriate material. Scutcheon, hinges, vases, bowls, etc. (*c*) As in first quarter.

8^3	(*a*) As in fourth grade. (*c*) As in fourth grade. (*d*) As in fourth grade. (*e*) Rules of syntax and applications. Analysis of sentences.	(*a*) Definitions, rules and formulas. Miscellaneous exercises. (*b*) Definitions, problems and theorems relating to similar polygons and circles. (*c*) Reduction of fractions. Resolving of equations with two unknown quantities. (*d*) Simple form of accounts.	(*a*) Lessons on light, sound and electricity. (*b*) Comparative study of winds and their effects. (*c*) Organs of the special senses; care and training. (*d*) Suitable selections (see list).	(*a*) Topical general reviews: such as American Indians; negro slavery; taxation; political parties; inventions; growth of territory; causes and results of wars in which United States was a party. Questions connected with current events. (*b*) Principles of state government: basis; object of laws; relation of each branch to each other; duties of citizens and of officials; state questions discussed.	(*a*) Drawings in any medium of children in interesting attitudes, and of details of interiors of buildings. Freehand perspective. Story of pre-Christian architecture and ornament. (*b*) Making of simple joints. (*c*) As in first quarter.
8^4	(*a*) As in fourth grade. (*c*) As in fourth grade. (*d*) As in fourth grade. (*e*) Rules of syntax and applications. Analysis of sentences.	(*a*) Definitions, rules and formulas. Miscellaneous exercises. (*b*) Definitions, problems and theorems relating to prisms, pyramids, spheres, cylinders and cones. (*c*) Involution and evolution. (*d*) Simple form of accounts.	(*a*) Injurious insects; time and method of extermination. (*b*) Comparative study of states of society. (*c*) The effects of the use of narcotics upon respiration, nervous system and mental activity. (*d*) Suitable selections (see list).	(*a*) Topical general reviews continued: the tariff; growth of industries; territorial expansion; civil service reform; steam; electricity. Questions connected with current events. (*b*) Principles of national government: the constitution; national questions; rights and duties of nations; war and arbitration.	(*a*) Adaptation of natural forms to purposes of decorative design. Applications in book covers, title pages etc. Complementary groups of colors in design. (*b*) Making of simple objects involving joints. (*c*) As in first quarter.

A List of Books and Selections.

Following are the lists of books and selections to which reference has been made in the foregoing course of studies. It is difficult to draw the line between books of literature and books of information. Some of the books classed as literature may not properly belong there by a strict definition of that term, and some belonging under both heads are for the sake of brevity placed under only one. The selections are intended for reading and memorizing by the pupils. Some of them may be used by teachers of the lower grades for reading to the children. The list is far from complete, and should be added to by the teachers as good selections are found.

Books of Literature (Grades I., II. and III.).

Æsop's Fables.
Alice's Adventures in Wonderland (Dodgson).
Bible Stories, 2 vols. (Modern Readers' Bible Series).
Child Life in Verse (Whittier).
Children's Garlands (Patmore).
Child's Garden of Verse (Stephenson).
Christmas All the Year Round (Howells).
Dream Children (Scudder).
Fables and Folk Stories (Scudder).
Fairy Tales (Andersen).
Fairy Tales (Grimm).
In the Child's World (Poulsson).
Jungle Book (Kipling).
Kindergarten Stories (Wiltse).
Nature in Verse (Lovejoy).
Nature Myths (Cooke).
Old Greek Stories (Baldwin).
Old Stories of the East (Baldwin).
Old Testament Stories (Houghton).
Open Sesame, No. 1.
Poems for Children (Ewing).
Poetry for Children (Eliot).
Poetry for Children (Lamb).
Poetry of the Seasons (Lovejoy).
Rainbows for Children (Child).
Stories for Children (Wiggin).
Stories for Children (Lane).
Stories of King Arthur (Hanson).
Sunshine Land (Thomas).

Selections of Literature for Reading and Memorizing (Grades I., II. and III.).

Calling the Violets (Larcom).
Christmas Bells (Longfellow).
Daffodils (Wordsworth).
Hiawatha's Childhood (Longfellow).
Lady Bird (Southey).
Lady Moon (Lord Houghton).
Little Dandelion (Bostwick).
Little Kitty (Prentiss).
Little Things (Anonymous).
Mountain and the Squirrel (Emerson).
New Year's Eve (Andersen).
One by One (Procter).
Rain in Summer (Longfellow).
Seven Times One (Ingelow).
Spring (Thaxter).
Stop, Stop Pretty Water (Follen).
Sweet and Low (Tennyson).
Thanksgiving Day (Child).
The Baby (MacDonald).
The Bee and the Flower (Tennyson).
The Brook (Tennyson).
The Brown Thrush (Larcom).
The First Snowfall (Lowell).
The Night Before Christmas (Moore).
The Spider and the Fly (Howitt).
The Frost Spirit (Whittier).
The World (Lilliput Levee).
The Lamb (Blake).
We are Seven (Wordsworth).
Who Stole the Bird's Nest? (Child.)

Books of Information (Grades I., II. and III.).

All the Year Round, 4 vols. (Strong).
American Life and Adventure (Eggleston).
Aunt Martha's Corner Cupboard (Kirby).
Brooks and Brook Basins (Frye).
Child's Book of Nature, Vol. 1 (Hooker).
Friends in Feathers and Fur (Johonnot).
Grandfather's Stories (Johonnot).
Historic Boys and Girls (Brooks).
Learning About Common Things (Abbott).
Little Folks in Feathers, etc. (Miller).
Little Folks of Other Lands (Chaplin).
Madam How and Lady Why (Kingsley).
My Saturday Bird Class (Miller).
Nature Stories (Bass).
Nature's Byways (Ford).
Queer Little People (Stowe).
Rab and His Friends (Brown).
Seed Babies (Morley).
Stories for Children (Hale).
Stories of Animal Life (Bass).
Stories of Plant Life (Lane).
Stories of Colonial Children (Pratt).
Stories of Massachusetts (Hale).
Stories Mother Nature Told (Andrews).

Books of Literature (Grades IV., V. and VI.).

Among the Hills (Whittier).
Ballads of New England (Whittier).
Bible Stories (Modern Readers' Bible Series).
Cricket on the Hearth (Dickens).
Gods and Heroes (Francillon).
Grandfather's Chair (Hawthorne).
Gulliver's Travels (Swift).
Hiawatha (Longfellow).
King of the Golden River (Ruskin).
Little Daffydowndilly (Hawthorne).
Little Lord Fauntleroy (Burnett).
Merry Adventures of Robin Hood (Pyle).
New England Legends, etc. (Drake).
Old Greek Stories (Baldwin).
Old Stories of the East (Baldwin).
Open Sesame, No. 2.
Popular Tales from the Norse (Dasent).
Rab and His Friends (Brown).
Robinson Crusoe (Defoe).
Six Tales from Arabian Nights (Eliot).
Stories of the Iliad and Odyssey (Church).
Swiss Family Robinson (Wyss).
Tanglewood Tales (Hawthorne).
Tent on the Beach (Whittier).
The Birds' Christmas Carol (Wiggin).
Water Babies (Kingsley).
Wonder-Book (Hawthorne).

Selections of Literature for Reading and Memorizing (Grades IV., V. and VI.).

Abou Ben Adhem (Hunt).
A Child's Thought of God (Mrs. Browning).
All Things Beautiful (Alexander).
Barbara Frietchie (Whittier).
Barefoot Boy (Whittier).
Belle of Atri (Longfellow).
Building of the Ship (Longfellow)
Cassabianca (Hemans).
Children (Longfellow).
Christmas Carmen (Whittier).
Daybreak (Longfellow).
Do All that You Can (Sangster).
Flower in the Crannied Wall (Tennyson).
From My Arm Chair (Longfellow).
Grandmother's Story (Holmes).
Gulliver's Travels (Swift).
Hiawatha's Friends (Longfellow).
Hiawatha's Sailing (Longfellow).
How the Leaves Came Down (Coolidge).
In School Days (Whittier).
Landing of the Pilgrims (Hemans).
Leak in the Dike (Cary).
March (Larcom).
Marjorie's Almanac (Aldrich).
My Playmate (Whittier).
Paul Revere's Ride (Longfellow).
Pegasus in Pond (Longfellow).
Queer Little People (Stowe).
Robert of Lincoln (Bryant).
Sheridan's Ride (Read).
Snowflakes (Longfellow).
Spring Has Come (Holmes).
Story Hour (Wiggin).
The Arrow and the Song (Longfellow).
The Brook and the Wave (Longfellow).
The Battle of Blenheim (Southey).
The Birds' Christmas Carol (Wiggin).
The Building of the Ship (Longfellow).
The Little People of the Snow (Bryant).
The Gladness of Nature (Bryant).
The Rainy Day (Longfellow).
The Sandpiper (Thaxter).
The Bugle Song (Tennyson).
The Village Blacksmith (Longfellow).
The White-footed Deer (Bryant).
The Yellow Violet (Bryant).
Wreck of the Hesperus (Longfellow).

Books of Information (Grades IV., V. and VI.).

A-Hunting of the Deer (Warner).
A Man Without a Country (Hale).
Around the Hub (Drake).
Birds and Bees (Burroughs).
Biographical Sketches (Hawthorne).
Black Beauty (Sewell).
Boys of '76 (Coffin).
Boys of '61 (Coffin).
Building the Nation (Coffin).
Cast Away in the Cold (Hayes).
Children of the Cold (Schwatka).
Child's Book of Nature, Vol. 2 (Hooker).
Claws and Hoofs (Johonnot).
Curious Homes, etc. (Beard).
Each and All (Andrews).
Fairyland of Flowers (Pratt).
Fairyland of Science (Buckley).
Five Little Peppers (Sidney).
Geographical Reader (Scribner).
Geographical Readers (Philips).
Geographical Readers (King).
Hans Brinker and Silver Skates (Dodge).
Historical Readers (Gilman).
Indian History for Young Folks (Drake).
In Brooks and Bayou (Bayliss).
Old Times in the Colonies (Coffin).
Our Fatherland (Carver and Pratt).
Pilgrims and Puritans (Moore).
Seven Little Sisters (Andrews).
Sharp Eyes (Burroughs).
Stories of American History (Pratt).
Stories of Great Americans (Eggleston).
Stories of Greece (Guerber).
Stories of Our Country (Johonnot).
Stories of the Old World (Church).
Stories of the Romans (Guerber).
Ten Boys who lived on the Road from Long Ago till Now (Andrews).
Ten Great Events in History (Johonnot).
The Boy's Froissart (Lanier).
The Boy's King Arthur (Lanier).
The Children's Crusade (Gray).
The Story of the Birds (Baskett).
True Stories from New England History (Hawthorne).
Our Own Birds (Bailey).

Books of Literature (Grades VII. and VIII.).

Ben Hur (Wallace).
Bunker Hill Orations (Webster).
Cape Cod (Thoreau).
Character (Smiles).
Christmas Carol (Dickens).
Courtship of Miles Standish (Longfellow).
Enoch Arden (Tennyson).
Evangeline (Longfellow).
Feats of the Fiord (Martineau).
Greek Heroes (Kingsley).
Idylls of the King (Tennyson).
Ivanhoe (Scott).
Jason's Quest (Lowell).
Julius Cæsar (Shakespeare).
Kenilworth (Scott).
Lady of the Lake (Scott).
Legends of New England (Hawthorne).
Magna Charta Stories (Gilman).
Marmion (Scott).
Merchant of Venice (Shakespeare).
My Hunt after the Captain (Holmes).
Patriotic Reader (Carrington).
Peasant and Prince (Martineau).
Pilgrims Progress (Bunyan).
Selections from the Alhambra (Irving).
Selections from Ruskin.
Self Help (Smiles).
Snow Bound (Whittier).
Tales from Shakespeare (Lamb).
Tales of a Wayside Inn (Longfellow).
Tales of the White Hills (Hawthorne).
The Talisman (Scott).
Tom Brown at Rugby (Hughes).
Uncle Tom's Cabin (Stowe).
Vicar of Wakefield (Goldsmith).
Vision of Sir Launfal (Lowell).

Selections of Literature (Grades VII. and VIII.).

Address at Gettysburg (Lincoln).
Among the Hills (Whittier).
An Invitation to the Country (Bryant).
Belfry of Bruges (Longfellow).
Bells of San Blas (Longfellow).
Charge of the Light Brigade (Tennyson).
Concord Hymn (Emerson).
Christmas Carol (Dickens).
Chambered Nautilus (Holmes).
Duty (Emerson).
Excelsior (Longfellow).
Freedom (Lowell).
Good Cheer (Bronté).
Gradation (Holland).

Selections of Literature (Grades VII. and VIII.) — Concluded.

Herve Riel (Browning).
Horatius (Macaulay).
How they Brought the Good News (Browning).
I wandered lonely as a Cloud (Wordsworth).
King Robert of Sicily (Longfellow).
Ladder of St. Augustine (Longfellow).
March (Larcom).
Marco Bozzaris (Halleck).
Nobility (Carey).
Old Ironsides (Holmes).
Pied Piper of Hamlin (Browning).
Psalm of Life (Longfellow).
Rhœcus (Lowell).
The Gladness of Nature (Bryant).
The Forest Spirit (Whittier).
The Corn Song (Whittier).
The Arsenal at Springfield (Longfellow).
The Day is Done (Longfellow).
The New and the Old (Bryant).
The Builders (Longfellow).
The Battlefield (Bryant).
The Boy of Ratisbon (Browning).
The Pumpkin (Whittier).
The Sea (Procter).
The Witch's Daughter (Whittier).
The Snow Storm (Emerson).
The Rivulet (Bryant).
Three Bells (Whittier).
The New and the Old (Bryant).
To a Water Fowl (Bryant).
To-day (Carlyle).
To the Rhodora (Emerson).
To a Cloud (Bryant).
To the Fringed Gentian (Bryant).
The Vision of Sir Launfal (Lowell).
Washington's Character (Everett).
Wind and Stream (Bryant).
Winter (Tennyson).

Books of Information (Grades VII. and VIII.).

American Boys' Handy Book (Beard)
American Girls' Handy Book (Beard).
American Explorers (Higginson).
Among the Law Makers (Alton).
Autobiography (Franklin).
Boy Travellers (Knox).
Building of the Nation (Coffin).
Bulfinch's Age of Chivalry (Hale).
Bulfinch's Age of Fable (Hale).
Child's Book of Nature, Vol. 3 (Hooker).
Child's History of England (Dickens).
English History for Beginners (Higginson).
Ethics of Success (Thayer).
Fifteen Decisive Battles of the World (Creasey).
Life of Washington (Fiske-Irving).
Life of Washington (Brooks).
Marco Polo (Towle).
Plutarch's Lives (Ginn).
Story of our Continent (Shaler).
Stories of the War (Hale).
Stories from English History (Harpers).
Ten Great Events in History (Johonnot).
The American Citizen (Dole).
The Making of New England (Drake).
Washington and his Country (Irving).
Zig-Zag Journeys (Butterworth).

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